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AUDIO MEDIA

THE WORLD'S LEADING PROFESSIONAL AUDIO TECHNOLOGY MAGAZINE

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NEW MICROPHONES:

Shure Beta 181

Sennheiser MK 4

sE Electronics RN17

Game Sound 2011

Includes Limbo, Portal 2, Level Standards, Phil Kovats Interview, and more!

Product Sampler: DAW Update

A NEWBAY MEDIA PUBLICATION

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Adobe Audition CS5.5 • Focusrite 2802 • Universal Audio 4-710d • Play Network: Sounds To Shop by • Classic Cut: Lawrence of Arabia • GeoFocus: China • What's Up UK: The Time for Smart TV? • Infocomm Show Report • Special Report: Recording Architecture – Inside The Book • Video Guide: Colour Grading Part 16 – The Software Revolution • Recording News • Post News • Broadcast News • SR News • And More...!

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Perfect take every time ...

Gil Norton

Foo Fighters
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Gomez
Feeder
Counting Crows
Maximo Park

"I can't remember a single session over the last 5 years on which I haven't used an SE mic"

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Everyone must be familiar with the nonsense of living your special moments through the viewing screen of a camcorder – the idea is that if you record sports day you can see it whenever you like. Unfortunately though, you will never actually experience it. And it's tricky holding a camera plus a spoon with an egg on it at the same time.

I saw someone doing the same thing with an iPad recently (not the spoon and egg thing), which looked very funny – like he was watching the world through a black frame. He probably wasn't even recording as it's unlikely he'll ever watch the video again – he's just using the iPad as a filter to prevent reality burning out his eye sockets. Evolutionarily speaking, aversion to reality might become another great excuse to wear sunglasses indoors.

Back to the difference between the viewer and the 'experiencer'. One question is, can a microphone have the same effect? I guess the answer has to be yes – there's nothing new about the idea of tools becoming the focus and the product becoming merely an incidental symptom of using those tools. It's often the second thing that wise producers say. Nothing new there then.

So a new question is, can a microphone actually record an experience anyway? I don't think a camcorder can. Yes, you can see everything, and probably hear everything – in a limited, band-pass kind of way – but you can't experience it. Oh, but that's part of the problem – I'm asking a question about what a recording device can capture, and the only reference I have is what I can play back. Technically pictures, I think, are still further from experience than sound.

In the sound studio, it comes down to wires, transducers, and rooms. The way you truly know you've come close to capturing reality is that spine-tingling sensation of listening to a fantastic recording on an amazing monitoring system and being utterly unable to do anything except experience it. It doesn't have to be actual reality, but it has to feel like reality. Sometimes people question the value of a great playback system. They should be told that it's not just about checking the sound – it's about checking the experience.

Paul Mac, Editor

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If the product develops a fault more than 3 years from purchase, we would consider this as 'wear and tear' and we then offer an 'Upgrade Warranty' which allows you, the customer, to purchase a brand new replacement (or equivalent sE product) direct from sE Electronics in the UK at 50% off the list price at the time of replacement purchase.

HALO NOW SHIPPING

Originally announced at the Frankfurt Musikmesse, Sontronics' HALO is now shipping. HALO is a vintage-style dynamic microphone for guitar amps. Its dynamic capsule is suspended in a circular frame, similar to the Sontronics SATURN. HALO is based on the technology found inside Sontronics' STC-80 handheld dynamic mic, which gives great results on guitar amps and cabs as well as the vocals it was originally designed to handle.
www.sontronics.com

NEW DEVELOPMENT

Lauten Audio and Dr. Charles Chen Ph.D. have filed for a new patent related to microphone capsule biasing. Dr. Chen's invention rela tes to an innovative double-bias circuit for condenser microphone capsules that generates a balanced output directly from a condenser capsule without the need for a phase splitter or transformer in the circuit path. Lauten Audio plans to implement the new invention with condenser microphones.
www.lautenaudio.com

Redefining Underground Music

A crew from Classical Minnesota Public Radio recently used a pair of Sennheiser MKH 800s and Neumann KM 140 microphones to capture an unusual performance deep in the 27th level of the Soudan Underground Mines. The crew recorded A Capella vocal group Cantus 2,341 feet below the surface as part of its Sonic Architecture series.

The performance presented several challenges for Rob Byers, Technical Director at MPR. "We use the MKH 800s because of their high performance in a variety of locations," Byers commented. "I felt confident they would deliver in this unique environment, and I was not disappointed... The Sonic Architecture series is all about capturing the natural sound of the space, and the Sennheiser MKH 800s and Neumann 140s allowed us to accomplish just that.""
www.sennheiser.co.uk
www.neumann.com

A Host of New Products from Radial

Radial Engineering has released the stand-alone Workhorse WR8 500 series rack, and three new 500 series modules. The Workhorse WR8 is an eight-slot 500 series mixer that is fully compatible with all standard 500 series modules. Following the successful launch of the Workhorse in America, this rack-only version has been made available for users that don't require the built-in eight-channel mixer.

Also new from Radial is the Q3 module, a three-band induction coil EQ; the EXTC 500, a device that converts a balanced signal to a guitar level effects loop and then re-converts for processing; and the TankDriver, a 500 series module that enables the use of spring reverb in a guitar amplifier, bringing the effect into a recording system.

www.radialeng.com

RAFA IS GAGA FOR JZ

Recording engineer and producer Rafa Sardina used JZ microphones extensively while recording Lady Gaga's *Born This Way*. "It was really exciting to do some out of the ordinary sessions for Lady Gaga using the JZ V47 and V67 microphones," Rafa commented.
www.jzmic.com

HOLLYWOOD BRASS

EastWest has followed up its Hollywood Strings Virtual Instrument with Hollywood Brass, a massive 150GB instrument with the new PLAY 3 playback engine for the very latest in performance and control.
www.soundsonline.com

NEW PRODUCTS

steinberg

Steinberg has released four new VST Sound Loop Sets in cooperation with Sample Magic. The VST Sound Loop Sets are a compilation of Sample Magic's best sounds and loops in a format that takes full advantage of Sequel and Cubase.
www.steinberg.net

DELTA-LINK UPDATE

Solid State Logic has released new V2 Firmware for the Delta-Link MADI HD, introducing support for Pro Tools native cards. The new Firmware also introduces support for longer Dig.Link Cables between Delta-Link and Pro-Tools native, Pro-Tools Core or Pro-Tools Accel Cards.
www.solidstatelogic.com

GRIZZLY BEAR TAKES ON TWO BIRDS

American folk-rock band Grizzly Bear has recently purchased Thermionic Culture's Rooster stereo valve pre-amp, EQ, distortion, and the Culture Vulture stereo valve distortion for their recording studio and current recording projects.

www.thermionicculture.com

KIT UPGRADE

German record label Park in Place Music has installed a Genelec 8260A system as part of an upgrade to its tracking and control rooms. The newly developed coaxial-technology provided a linearity and accuracy of sound that had not been expected: "This is really, really good," commented Producer Engin Colin Kilic.

www.genelec.com

NEW APP FOR AVID MUSICIANS

Avid has released its first application for the iPad. Avid Scorch transforms an iPad into an interactive score library, music stand, and sheet music store powered by Avid's Sibelius music notation software engine. Avid Scorch is available now on the App Store.

www.avid.com

KMR CLASP

KMR Audio recently ran a number of demonstrations of the new CLASP analogue tape system. CLASP offers an easy, cost-effective way to integrate analogue tape into digital production workflow by turning any tape machine into a DAW plug-in processor.

www.kmraudio.com

New Recording Studio Uses The Force

North Carolina's Sound Temple Studios has installed a Solid State Logic Matrix console and Alpha-Link audio converters. The studio was only completed last year but is already making a big impact.

"The name 'Sound Temple' is quite representative of the vibe," explained studio owner Robert George. "It was designed and built as a sacred place to make music as well as a world-class recording studio. I employed Wes Lachot for the project, who some consider as the Jedi of studio design. He is in to Feng Shui and there is a clockwise flow of energy when you are making music here that people feel and appreciate."

At Sound Temple's heart Robert has installed an SSL Matrix, which he considers a major attraction for the studio's fast-growing client list. "The first question people ask is 'what sort of console or workstation do you have?', so having a console that people are going to want to work on was on the top of my list for Sound Temple. Having an SSL was the obvious choice and Matrix has the right price point, it has the right features, it's an amazing controller, and it's just flawless – it really is bullet proof."

www.solidstatelogic.com

Boris Salchow Leads The Resistance

Composer Boris Salchow has recorded a diverse orchestral score for Insomniac Games' *Resistance 3* at Abbey Road Studios. "In *Resistance 3*, human civilisation as such is gone," explains Salchow. "People flock together in small groups, trying to survive as long as possible. Not even a military organisation is left. The soundtrack reflects this – instead of military elements, we find some very intimate sounding compositions where I use piano, woodwinds, a boy soprano, and sombre string arrangements. For this setting, it was crucial to record the score live since the *Resistance 3* score describes the emotions of the survivors. Going to London and recording this music with such incredible A-list musicians at this historical venue was the perfect match for the game, and it was an incredible honour for me personally. I am very thankful that Insomniac made this happen."

www.insomniacgames.com

SUBSCRIBER PRIZE DRAW

Congratulations to Tim Boissaud-Cooke, from Maidenhead in Berkshire, who is this month's lucky winner of the Audio Media subscribers' prize draw. Each month throughout 2011, one randomly selected subscriber will win an sE 4400a microphone. To be entered into the draw, you must have a current digital or print subscription. To get one, go online to the address below. Good luck!

www.audiomedia.com/subscribe.html

FRAUNHOFER PRO-CODEC

Sonnox is now shipping its Fraunhofer Pro-Codec, a solution for improving the quality of online music.

"Our Sonnox Fraunhofer Pro-Codec marks the first time engineers are able to precisely audition codecs in real time," says Sonnox Managing Director, Rod Densham. "The Pro-Codec eliminates the time-consuming cycle of encoding a mix to mp3/AAC, previewing, tweaking and re-rendering. The entire process may now be accomplished on the fly, freeing the engineer to concentrate on producing an optimised mix during the preview process."

www.sonnoxplugins.com

New Axia Consoles at Broadcast Asia

Axia Audio showed its two newest IP consoles at Broadcast Asia 2011, held from June 21-24 in Singapore. Axia's new Radius and iQ consoles offer the capabilities and networking features of their larger predecessors, at the lowest price ever for IP consoles. Radius is a compact networked mixing desk with four stereo buses, eight faders, and 16 audio I/O ports. IQ is a full-featured four-bus IP console, available in sizes from eight to 24 faders.

Axia also recently provided American broadcaster WSM with consoles and IP-Audio networking gear to outfit its Nashville studios. WSM's purchase included 20- and 28-position Element 2.0 mixing consoles with PowerStation integrated console engines, as well as several Axia Audio Nodes.
www.AxiaAudio.com

VISTA 8 GIVES JORGE SILVA UNLIMITED RESOURCES

Harman's Studer Vista 8 digital live production console is now in use for America's Martha Stewart Show on the Hallmark Network. Jorge Silva, the program's Head Audio Engineer, recalls working with other mixing and processing platforms before the Vista 8. "I remember having to piece things together to make them work, going on air with limited equipment and having to do hot switches during two-minute commercial breaks, crossing your fingers that it was going to work... now we have unlimited resources and you can tailor the console to be more friendly to what you are trying to do. You can build the console around each task. I do not want to go back to how it was before."
www.studer.ch

SONIFEX MODERNISES BRENNERMEDIEN

German production studio BrennerMedien has been completely modernised and refitted with Sonifex S2-Digital I/O Analogue Radio Broadcast Mixers. Andreas Brenner, owner of BrennerMedien, explained, "We bought the Sonifex consoles because they are practice-oriented, value for money, and offer boundless possible settings. They also have a modular system for future studio expansion."
The S2 mixer has a wide range of input and output channels, and is built to the customer's specification. It has two main audio buses, allowing broadcasting on the main PGM bus and simultaneous recording on the AUD bus, with bus output selection on each module.
www.sonifex.co.uk

ABU DHABI DABBLES WITH MEDIA DEVELOPMENT

Twofour54, the Abu Dhabi government initiative for developing a world class Arabic media and entertainment content creation industry, has signed a three-year development deal with Kuwati filmmaker Walid Al Awadi. The venture, called C Sky Abu Dhabi, will develop and produce a number of Arabic TV and film projects. Speaking about the deal, Walid Al Awadi, Head of C Sky Pictures said, "This is a very exciting agreement that will add significantly to the amount of high quality, locally produced content for the Middle East and North Africa markets. We have very ambitious plans and will be offering audiences in the region superior quality, engaging content that looks to bridge the gap in cultural knowledge and understanding that exists between the Arab world and the western media productions."
www.twofour54.com

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Networking Audio Systems

LAWO

CAPSTAN NOW AVAILABLE

Celemony's new music restoration program Capstan is now available, with a demo version online. Capstan removes wow and flutter from musical material of all kinds by analysing the musical material itself, rendering the medium irrelevant. The program runs as a standalone application under Windows and Mac OS, and supports all common two-track formats.

www.celemony.com

GOLDCREST EXPANDS AGAIN

Having recently rebuilt two key theatres following extensive flood damage, Goldcrest Post has expanded again. With four ADR theatres, the Goldcrest Post sound team have been working flat out since Christmas resulting in the company increasing its ISDN and Dolby FAX capabilities to meet client demand. Goldcrest now offers 16 ISDN channels, two Dolby FAX units, and two APT units.

www.goldcrestfilms.com

Peter Dixon on the Road

Hackenbacker has been helping Peter Dickson, one of the UK's most famous voices, to capture his trademark voice-over style on the road. The enthusiastic *X-Factor* announcer explained that he has always been pretty successful at delivering a good vocal sound when on the road. "It's a bit of a black art. I have recorded on cruise ships, in hotel bedrooms, in wardrobes, and even in cars," says Dixon. "However, because of the lack of decent monitoring while out of the studio, I have never been able to fully know whether the sound I was delivering was consistent with my signature vocal print."

To solve this problem, Peter turned to Hackenbacker's founder Nigel Heath for some help with audio processing and sweetening. Using a combination of Hackenbacker Studio One's Neve fully digital console and Peter's own personal mobile recording rig, including microphone, pre-amp, and audio interfaces, Nigel was able to achieve what he calls "The Full Dickson".

Neve's settings and processing were modified, translated, and transferred to Peter's software by Studio One engineer Alex Fielding. Acoustical and software techniques were employed to ensure that Peter's voice hits the processing chain in exactly the same way, no matter where he might be recording.

"Nigel and Alex have created an effects stack on my Mac-based recording software that, when applied to any raw WAV files, re-creates as closely as possible the Big Hackenbacker Neve studio sound," Peter explained.

www.hackenbacker.com

TOP MARKS FOR FIRST GRADER

LipSync has provided investment and post production services for *The First Grader,* a film that tells the true story of an 84 year old Kenyan villager and ex-Mau Mau freedom fighter who fights for his right to go to primary school. Producer David Thompson said, "It has been a real pleasure collaborating with LipSync on *The First Grader.* The whole team is top draw and we couldn't be happier with the work they've done on it."

www.lipsyncpost.co.uk

NEW STUDIO

Astound Studios recently opened its doors on LA's Westside. The full-service facility provides post production packages for feature films, trailers, broadcast, and most other media. Clients include leaders from the film and music industry, such as the Regal Entertainment Group, Equilibrium Entertainment, Real D, NCM Media Networks, Concord Music Group, and recording artist Slayer. The new studios employed the Russ Berger Design Group to create an inspiring space.

www.astoundstudios.net

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www.audiomedia.com

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NEW PRODUCT

Lectrosonics has introduced the HH Handheld Transmitter, the company's newest addition to its line of Digital Hybrid wireless microphone systems. With the ability to accept third party thread-on capsules and its broad input gain range, the new HH transmitter is a robust microphone for presenters, educators, and for use in houses of worship.
www.lectrosonics.com

JBL AT THE ACAP AWARDS

The American Society of Composers, Authors, and Publishers recently held its 28th Annual ASCAP Pop Music Awards at the Renaissance Hollywood Hotel and Spa in Los Angeles. The rental sound system contractor for the ASCAP Pop Music Awards was Swank Audio Visuals, who provided a Harman JBL VerTec line array system for the event.
www.jbl.com

Meyer Enables Stellar Wallcast

Adjacent to the Frank Gehry-designed New World Center, America's new $13 million Miami Beach SoundScape has raised the bar for music presentation in open public spaces. Installed for audiences in the 2.5-acre park, the audio system employs Meyer Sound's Constellation acoustic technology with more than 160 self-powered loudspeakers to replicate the immersive sonic experience enjoyed simultaneously by listeners inside the 756-seat hall for the New World Symphony. At the same time, HD video of the concert is projected on an exterior wall, with the total experience dubbed a 'Wallcast.'

In all other installations, Constellation active acoustic technology is used to provide flexibility and enhancement of existing interior acoustical spaces. Here, Constellation uses a minimum of 22 microphones inside the New World Center as the acoustical starting point, then applies VRAS processing algorithms to tailor the sound for optimum effect in the outdoor environment.

"It's been a very exciting project," summed up Sound Designer Fred Vogler. "We couldn't have asked for a better initial reception, but I think we've only just begun. There's a lot of adventure yet to come, with this system and others like it that are likely to follow."
www.meyersound.com

Sennheiser Goes All Night

X-Factor winner Alexandra Burke has embarked on her first UK tour, All Night Long, taking in such venues including Hammersmith and Manchester Apollo, Brighton Centre and Cardiff Arena. Sennheiser microphones and IEMs have become an integral part of her touring rig.

"Sennheiser has been working with Alexandra on my recommendation to her since the very early days after she won ***The X Factor***," explained Monitor Engineer 'Baggy'. "Initially they supplied her with a self-designed, personalised SKM 5200 Swarovski microphone via CrystalRoc and a set of ew 300 IEMs that we fly racked for promo appearances. This small system eventually evolved into the basis of the set up that we used on the production tour."
www.sennheiser.co.uk

NEW PRODUCT

Outline has debuted its iMode iPad app. iMode technology streamlines set-up and control by eliminating the outboard gear between the console and power amplifier. To do so, it embeds a Linux-based CPU with integrated DSP chip, parameter control software, and Web server right into its powered speaker systems.
www.outline.it

NEW PRODUCT

KMR has become the UK distributor for the Bettermaker EQ 230P. The first product from this boutique Polish manufacturer, the Bettermaker EQ 230P is a digitally controlled analogue stereo/dual mono equaliser. Besides its pure analogue signal path, the unit has a full digital recall with 399 cells for user definable presets.
www.bettermaker.eu

NEW PRODUCTS

Harman's Selenium debuted its latest midbass and woofer W16P series at InfoComm 2011. Selenium's 6W16P six-inch mid-bass, 8W16P eight-inch, and 10W16P 10-inch woofers reproduce sound with high fidelity and great efficiency. The series is constructed with an aluminum frame and aluminum-wire voice coil, a non-pressed long fibre cellulose cone, cloth surround, and push-on terminals.
www.harman.com

CRESTRON FOR SMARTMIXER

Audio-Technica has announced that its AT-MX381 SmartMixer now features full integration with Crestron Electronics control products, through a dedicated AT-MX381 module developed as part of Crestron's Integrated Parter Program.
www.audio-technica.com

SI SERIES UPGRADE

Soundcraft's Si Series has received an upgrade, providing more inputs on the Si1 and Si2 versions plus additional functionality and options across the range. With the range now designated the 'Si+' Series, the Si1+ has 16 additional mic inputs fitted as standard bringing the number of onboard mic inputs to 48.

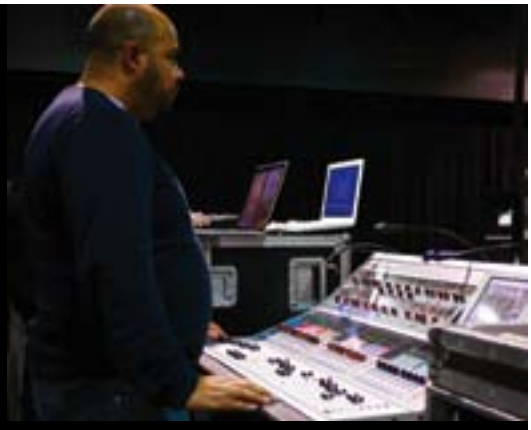
www.soundcraft.com

SOFTWARE UPDATE

Lab.gruppen and Lake have announced the release of v5.7 of Lake Controller software with accompanying firmware for PLM Powered Loudspeaker Management products and the LM 26 Digital Audio Loudspeaker Processor.

www.labgruppen.com
www.lakeprocessing.com

iLive Creates a Masterpiece with Adele



British musician Adele has just completed a tour of Europe and is currently on tour in America with an Allen & Heath iLive digital mixing system managing both FOH and monitor sound. The system comprises two iLive-112 Control Surfaces with an iDR10 modular MixRack and iDR0 mini Rack, connected via ACE and input sharing over MADI.

"iLive stands apart from other consoles because of its ease of use," commented FOH Engineer Dave McDonald. "Like painting, you want to be creating when you mix, not reading a manual. You can do that with this desk – you stand in front of it and it's logical. It's also reliable, you know that you can get up in the morning, turn it on, and it does exactly what it's meant to do every day."

McDonald has produced a 64-channel live recording from iLive via the MADI connection. For broadcast duties, an additional iDR10 MixRack, daisy-chained to the MADI split, provides up to 64 XLR mic-pre outputs, or any mix signals as needed on the day without affecting front end gain.

www.allen-heath.com

NEW PRODUCT

AKG debuted its WMS 470 wireless system at Infocomm. WMS 470 incorporates a number of upgrades from previous lines, delivering reliable operation and ease of use. A new automatic frequency set-up function immediately finds and displays all available channels, making the system ideal for less experienced users to operate. The pilot tone function prevents unwanted start-up noise by prompting the receiver to open the audio. The microphone has a built-in dipole antenna to ensure reliable transmission with 50mW output power, even if the user covers the antenna with their hand.

www.akg.com

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APG Goes Clubbing at BabyFace in Beijing

Babyface Beijing was hailed as the trailbreaker of the lounge club concept in Beijing when it first opened in December 2004, and the club that changed the whole pattern of Beijing's night life. Bigger, more fashionable, and more comfortable than any of the other seven venues in the chain, when it came up for sale recently Chinese entrepreneur Mr Dai jumped at the chance to purchase the club, which he then set about refurbishing from top to bottom. An important part of the refurbishment was the replacement of the sound system, which is now APG throughout.

Mr Dai was very clear about what he wanted to achieve: "I want this club to stand out from the crowd," he said. "And for that, I have to have the best sound system and the best lighting system available." He turned to local audio experts and APG distributors BVCAM to help him with his choice of equipment.

BVCAM specified six APG SMX15 monitor speakers for the main room. Six APG TB218S subs handle the low frequencies supplemented by DS15s and SUB238s for side-fill. "One of our main priorities for the sound design was to ensure the same SPL throughout the room, regardless of whether you're sitting in the furthest corner or you're right in the middle of the dancefloor," noted Huen. "It doesn't matter where you are in the room – the sound quality remains homogenous throughout, and of extremely high quality."

In addition to the main room, Babyface also offers a number of VIP spaces available for private hire, the largest of which is the dual-level King Room. Often reserved for karaoke parties, the King Room is equipped with APG DS12 and DS15 multi-purpose enclosures on the lower level with DS8s handling upstairs. A further 12 smaller VIP rooms are equipped with two APG DS12s and one APG SUB138P each. All of the VIP rooms offer clients the choice between a feed from the main dancefloor or their own private DJ.

APG's Sales and Marketing Director, Xavier Pion comments, "This installation at Babyface with APG systems proves yet again that we made the right choice with BVCAM as our distributor in China. They have done an excellent job on this big project. It's also a testament to the versatility of SMX15, which is just as well suited to the requirements of big clubs such as Babyface as it is to the stage. They wanted the best, and it is a great satisfaction that the customer is happy with the result."

VITAL STATISTICS – CHINA

FULL NAME	People's Republic of China
POPULATION	1.35 billion (UN, 2010)
CAPITAL	Beijing
LARGEST CITY	Shanghai
MAJOR LANGUAGE	MandarinChinese
MONETARY UNIT	1 Renminbi (yuan) (Y) = 10 jiao = 100 fen
MAIN EXPORTS	Manufactured goods, including textiles, garments, electronics, arms
GNI PER CAPITA	US $3,590 (World Bank, 2009)
INTERNET DOMAIN	.cn
INTERNATIONAL DIALLING CODE	+86

Sequenza 10 at National People's Congress

A recent concert at the National People's Congress in the Beijing Trade Hotel was performed by MYC with the Sequenza 10 line array from Kling & Freitag. The 330m high building with its 81 floors is at present the highest of Beijing. The 40m wide show stage was equipped with four K&F Sequenza 10N for the far field and two Sequenza 10W for the nearfield.

Six Sequenza 10B and two Nomos XLC in cardioid setup supported the system in the lower frequency range. In total, 40 different radio and hand-held microphones were employed. A high quality monitor system, consisting of two Scena 15, provided the musicians with precise feedback, with a warm and precise basic sound. All speaker systems were driven by the K&F SystemRack. The combination of the digital system controller CD 44 with the LAB. Gruppen FP 10000Q ensured the quick setting and the high performance of the system.

The event was attended by high-ranking party members including the Mayor of Chongqing and the Mayor of Beijing. The highlight of the evening was the song *Me and my Native Country,* performed by the singers together with the Mayor of Chongqing.

Q-Sys & Riedel at 16th Asian Games

The opening and closing ceremonies to mark the 16th Asian Games, held on Haixinsha Island, Guangzhou, differentiated from similar events seen previously – with the spectacular event making the city as the background and the Pearl River as the stage. In fact the event started on the river, with a ship sailing from east.

In order to make the ceremonies a success, the island was equipped with a series of public address systems, with QSC's Q-Sys control chosen to provide tourists from all over the world with "crystal clear sound reinforcement".

A Q-Sys network provided coverage to every corner of the island, with a powerful Q-Sys Core as the engine, and Q-LAN's low-latency Gigabit Ethernet network implementation as the transmission network.

There were eight control rooms on the island, two of them based centrally and the remainder as satellites. Two Core3000s provided back-ups for each other in the two central technical rooms. This redundancy meant that should any failure have occurred in one, the system would automatically have switched to the other. Other networking audio interfaces were placed in the auxiliary control rooms to feed signals to the nearby loudspeakers.

Riedel Communications installed a comprehensive communications system for the games. Riedel provided the venue communication system as well as the intercom for the opening and closing ceremonies, combining wired and wireless technologies.

The system for the ceremonies furnished an Artist digital matrix intercom system consisting of two mainframes connected via fibre, about 20 Artist 1000 series control panels, and around 75 Performer digital partyline beltpacks.

To provide the infrastructure for venue communications, Riedel equipped the venues with a Performer digital partyline systems offering a versatile and easy to use communications system with high quality digital audio and more than 600 beltpacks.

Riedel Communications also handled the installation of the analogue radio network that was integrated into the wired intercom infrastructure via RiFace interfaces. The radio network that covered the whole venue during the opening and closing ceremonies consisted of 16 semi-duplex channels for 720 conventional Motorola radios. Five FM-transmitters were used to address the 8,000 radio receivers at the events.

Guangzhou Opera House Installs Midas

Located in the new city of Pearl River, the Guangzhou Opera House has become one of China's three biggest theatres. Constructed from 12,000 tons of steel on a 70,000 sq.m site, the Opera House includes an 1,800-seat and a 400-seat theatre, both of which have been installed with Midas digital systems and analogue consoles, and Klark Teknik signal processing.

The Guangzhou Opera House was designed by London-based architect Zaha Hadid to represent two boulder-like structures of different sizes, with a theatre located in each. The Grand Theatre in the main structure has been installed with an XL8 live performance system in the control room, together with a Heritage 2000. A second XL8 has been added to the networked system for stage monitoring, and can be moved depending on the application.

A PRO6 live audio system and a Verona have been installed into the control room of the smaller, multi-purpose theatre, and there are two Venice 160s in the rehearsal studio and one in the news room.

Mr Zhou Xucun is Front of House Engineer at the Guangzhou Opera House. He explains that the decision to choose Midas consoles came after countless discussions and technical debates by audio experts: "Midas digital consoles have retained the legendary Midas audio quality, adding the power and convenience of onboard FX and dynamics processing while retaining their familiarly-laid out work surfaces, which make them extremely convenient to operate."

Since the Opera House opened, the Midas XL8 has been used for FOH on almost every live performance, including the opera Mulan, the opening ceremony of the 9th China Arts Festival, concerts by famous Chinese tenor Wang Hongwei, singer Zhu Zheqin, and the 2010 Chinese Film Awards.

MEDIA MATTERS

China is the largest media market in the world, and has the world's largest online population. Its TV and radio industry generated 24.4 billion dollars in 2009.

Outlets operate under tight Communist Party control. The opening-up of the industry has extended to distribution and advertising, not to editorial content. However, there is leeway for independent coverage that is not perceived as a threat to social stability or the Party.

Beijing tries to limit access to foreign news by restricting re-broadcasting and the use of satellite receivers, by jamming shortwave broadcasts, including those of the BBC, and by blocking websites. Ordinary readers have no access to foreign newspapers.

With nearly 1.2 billion viewers, TV is a popular news source and the sector is competitive, especially in cities. State-run Chinese Central TV (CCTV) is China's largest media company. Its provincial and municipal stations offer a total of around 2,100 channels. China is a major market for pay-TV, which is almost entirely delivered by cable.

In 2009, China launched new international TV channels and publications, spending billions of dollars to extend its political influence and boost its image abroad. It has been less keen to allow foreign players into the domestic market.

With 420 million surfers (China Internet Network Information Centre, June 2010) China has the world's largest Net-using population. More than 98% of wired Internet users opt for broadband. Mobile Internet users numbered around 277 million by mid-2010.

Smart Technology

KEVIN HILTON finds out whether now is the time to make SmartTV a viable option.

Many of you reading this are probably in thrall to your SmartPhone. That's hardly surprising; the concept – communications, camera, diary, database, music player, mini-TV, and a person's whole life wrapped up in a slim, stylish little bundle – is strong, regardless of whether anyone needs all that. The next device ripe for an integrated make-over is the television set, a piece of electronic equipment that has been central to the lives of most people since the days when a telephone that was not plugged into a wall at home was the stuff of science fiction.

So the time of the SmartTV is upon us. In fact this is a second coming. Back in the early to mid 1990s, with the home entertainment/home cinema boom on the upswing, much was made of interactivity and the logical extension was to have computer functionality on the TV – primarily Internet connection – or TV capability on computers.

TV/computers did appear back then but were not well received – "neither one thing nor the other" was one criticism – and the idea seemed to fade away. Today the technologies – and the will – appear to be there to make the concept viable. The terminology is also slightly different; this time round the talk is of "connected TV", rather than TV/computers or interactive sets.

TVs, are, of course, already connected, either by digital terrestrial signals, satellite and cable, with analogue in its last throes. Connected TV in this context means linking to the Internet, giving greater interactivity, including to shopping channels, and more sophisticated programme guides.

> "People want to be able to customise their SmartTV in the same way they can their SmartPhone… But what we have to remember is that TV viewing is generally done with someone beside you."

This new approach was discussed at a presentation in London during June entitled The Future of Digital Content in a Multi-Screen Environment, hosted by research and consulting firm Futuresource and entertainment guide and data company Rovi. The panellists represented a cross-section of manufacturers and broadcasters with a vested interest in this new form of programme distribution: Samsung Electronics Europe, Rovi, shopping TV channel QVC; video advertising network Smartclip; and music download service we7.

Dan Saunders, Head of Content Services at Samsung, observed that there had to be a "critical mass" reached in terms of SmartTVs available to make this product sector work. Saunders said 75 percent of Samsung TVs now on sale are either what can be described as SmartTVs or connected screens. But, he said, it is only in the last few months that services offering the extra dimension of interactivity beyond broadcast channels have become available in this market, including the BBC iPlayer and Love Film services.

Saunders added that although they are connected, SmartTVs are not the same as SmartPhones. "Even though it's called a SmartTV, it's not about the apps in the same way it is with SmartPhones," he commented.

Richard Bullwinkle, "chief evangelist" for Rovi, agreed, saying that while younger viewers did want Facebook on the TV, he didn't want his children's friends trying to message them while he was watching a programme. "People want to be able to customise their SmartTV in the same way they can their SmartPhone," he explained. "But what we have to remember is that TV viewing is generally done with someone beside you." Bullwinkle added that in the first year of this technology there were less than 15 percent of homes with connected TV but with the second and third generation of sets, and features like wireless connectivity, that was set to rise.

> "The next device ripe for an integrated make-over is the television set, a piece of electronic equipment that has been central to the lives of most people since the days when a telephone that was not plugged into a wall at home was the stuff of science fiction."

SmartTVs are an obvious outlet for home shopping networks. According to Richard Burrell, Director of Media Operations at QVC, connected TV is "in an evolution" that offers "an opportunity" to services like his. "By using TV production tools we can take programmes that cost a lot of money to make and repackage them for other outlets."

We7 is a free, legal MP3 music service that launched in 2007 for downloads, with streaming added the following year. It is financed by advertising and had start-up backing from Peter Gabriel, who co-founded online music company On Demand Distribution (OD2) in 2000. Clive Gardiner, Senior Vice President of Music, commented that we7 now wants to move into the areas where people do most of their music listening – the living room and the car.

Falling into the new category of pure-play "radio" services, we7 is working to carve out a market share against high-profile companies like Spotify. Futuresource recently published a report on the growth of pure-play listening and concluded that while it would not challenge FM or DAB radio, it did offer something attractive to most listeners. Principal Consultant John Bird, who chaired The Future of Digital Content in a Multi-Screen Environment meeting, said, "Thematic radio that can be personalised to a listener's taste is a big selling point for these Internet services. Perhaps even more important is the mobile aspect, with apps that can be used both in and outside the home. The in-car market is critical as well."

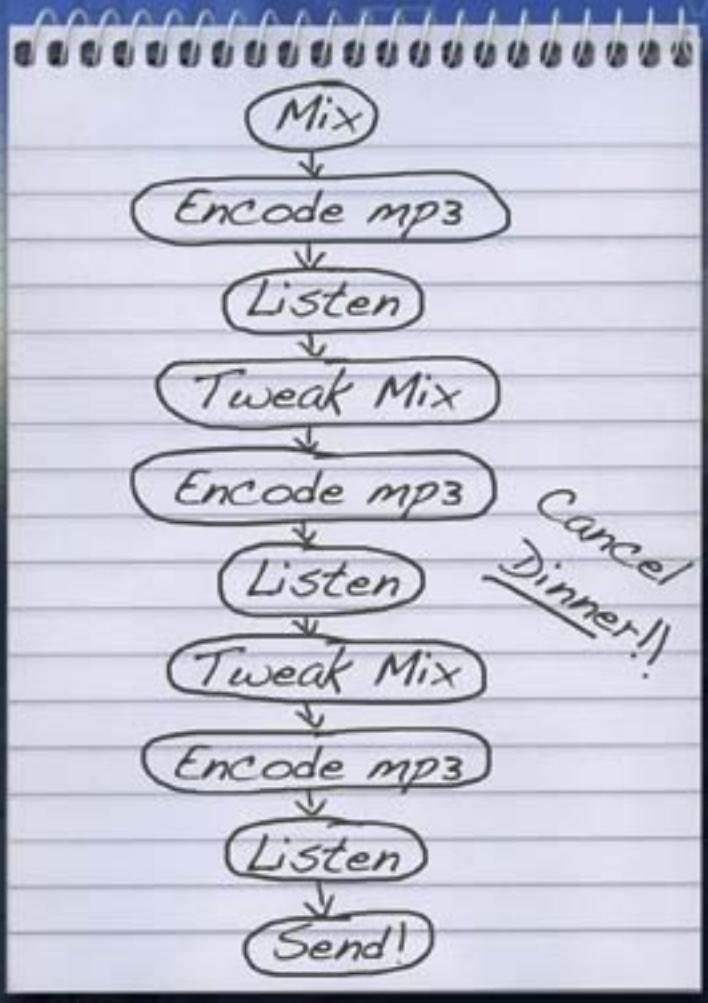
Back in the '90s there was concern that the fundamental difference between watching TV and using a computer – the "lean back" nature of the first and the "lean forward" necessity of the second – would work against integrating the two. Dan Saunders from Samsung agreed that the divide still exists but today there can be separate channels for linear television and Internet apps, with both controlled using the familiar handheld remote.

As Richard Bullwinkle observed, how a connected TV is used depends on the age of the user but the big selling point is allowing that person to get the information he or she wants.

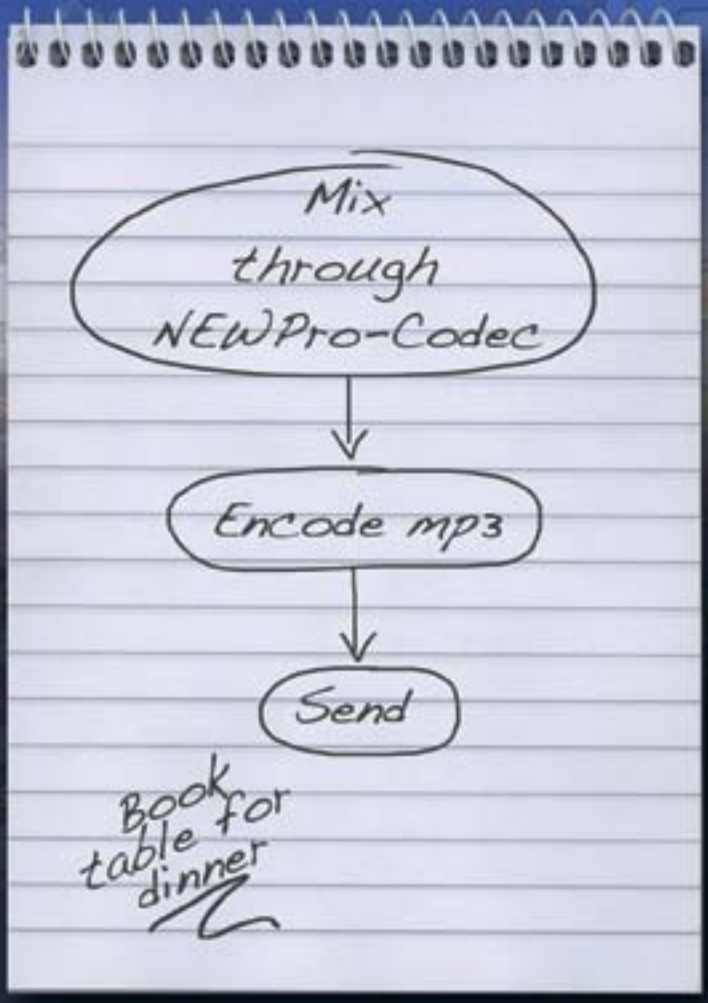
But sometimes all a viewer wants to do is veg out in front of the box watching a trashy programme or film or chill out listening to music. So a SmartTV is only ever going to be as smart as the person using it.

Audio Encoding Changed for Good

Old way to encode audio



New way to encode audio



Real Time Codec Auditioning

The Sonnox Fraunhofer Pro-Codec makes it possible, for the first time, to audition and encode to multiple formats in real time within a DAW environment. Maximum fidelity is assured, as the Pro-Codec helps create compensated mixes optimized towards specific target codecs for final coding and online distribution.

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Fraunhofer IIS

For more details and a free demo visit:
www.sonnoxplugins.com/procodec

Sonnox

InfoComm 2011

InfoComm 2011 attracted over 950 exhibitors and 32,000 AV professionals to Orlando, Florida, from June 11-17. InfoComm provides a platform for the latest developments in all areas of professional AV. Gathered here are some of this year's audio highlights.

AKG debuted its WMS 470 wireless system at InfoComm. WMS 470 incorporates a new automatic frequency setup function that detects and displays all available channels, making the system ideal for less experienced operators. The receiver will only open the audio if a pilot tone is detected, preventing unwanted startup noise.
www.akg.com

Aphex showed its new Channel and redesigned Exciter. The Channel is a re-imagined version of the Aphex Model 230, incorporating seven powerful devices in a single rack space unit. Included in the Channel are Aphex's RPA Tube Preamp, EasyRider Class A Compressor, Aural Exciter, and Big Bottom.
www.aphex.com

Aviom showcased the AllFrame Multi-Modular I/O System and its accessories. The system brings the flexibility of the company's Pro64 audio network to the wall box, stage box or floor pocket. At the centre of the AllFrame Multi-Modular I/O System is the F6 Modular I/O Frame, a multi-purpose network frame with six field-configurable I/O card slots and integrated Cat-5e and fibre optic connectivity.
www.aviom.com

Denon Professional showed its DN-F450R and DN-F650R Solid-state Audio Recorders. The recorders emphasise the company's commitment to providing consultants and contractors with digitally-based, solid media products that feature no moving parts, with high reliability and maintenance-free operation in challenging conditions.
www.d-mpro.com

DPA showcased its miniature and hanging microphone solutions, along with the new Reference Standard Series in a live piano demonstration. The new Reference Standard Series is fully modular – any capsule from the series can be combined with one of three new pre-amps for improved signal integrity, noise elimination, and tighter specifications.
www.dpamicrophones.com

EAW demoed recent additions to its MicroWedge Series of stage monitors. The MicroWedge8 and MicroWedge10 are a small-format continuation of the MW line from EAW. Although smaller than the already compact MW12 and MW15, the MW8 and MW10 offer volume levels and voicing that rival full-size 15-inch monitors.
www.eaw.com

Electro-Voice exhibited the RE320, the latest addition to its RE Performance Group of wired mics.
The RE320 features Electro-Voice's Variable-D proximity control technology for expressive and consistent tonal performance, a humbucking coil for noiseless operation, and a high-output neodymium magnet structure capsule for fast and accurate transient response.
www.electrovoice.com

HK Audio showed its Elements line of modular sound reinforcement, which merges the benefits of modern line array technology with the portability and easy handling of ultra-compact P.A. systems.
Elements consists of six easily combined components and a system can be configured to support anything from an intimate speaking engagement to a multi-instrumental concert.
www.hkaudio.com

Genelec showcased the 4040A, a new model in the 4000 Series range of active two-way loudspeakers.
The 4040A is designed for the professional installation market. However, it has a new larger tweeter and more powerful amplifier, making it suitable for larger conference rooms and auditoria.
www.genelec.com

Marantz Professional displayed the PMD580 Solid State Recorder from its range of rackmount digital recorders. The PMD580 has many of the same features and found in the PMD Series recorders with the addition of network connectivity.
The PMD580 can be positioned as a network device via its Ethernet port.
www.d-mpro.com

Merging Technologies launched Ovation at InfoComm 2011.
Ovation is a media server and sequencer that provides a new robust platform for use in live events. "Attendees representing every faction of our industry, including theme parks, churches, and live sound of every description were knocked out by Ovation," commented Merging's Dennis Gaines.
www.merging.com

Meyer Sound hosted demonstrations of its Constellation acoustic system and D-Mitri digital audio platform. The recently introduced JM-1P arrayable loudspeaker and MINA line array loudspeakers were also on show in the company's demo room. The JM-1P allows for pinpoint control of horizontal coverage.
www.meyersound.com

Outline introduced its Mini-COM.P.A.S.S. iMode Line Array powered speakers. Based on Outline's COMpact Polar Adjustable Sound System technology, Mini-COM.P.A.S.S. iMode offers a compact cabinet design that incorporates Outline's iMode technology for small to medium sized systems.
www.outlinearray.com

Peavey unveiled a host of new networking and control devices and power amplifiers. Among them were the Nware mobile app, a customisable user interface for controlling MediaMatrix NION digital audio systems. Also on show was the new Nx Dante-8 NexSys control module.
www.peavey.com

The **Renkus-Heinz** demo room offered demonstrations of the company's newest loudspeaker technologies, including Iconyx, IC Live, IC2, and CF101LA systems. Renkus Heinz also hosted a Technology Theater with regular seminars and a 'Geek Bar' with ongoing demonstrations of SysTune, EASE, EASERA, and RHAON.
www.renkus-heinz.com

Soundcraft showed upgraded versions of its Si Series. The upgrade provides more inputs on the Si1 and Si2 versions, as well as additional functionality and options across the range. The Si1+ has 16 additional mic inputs fitted as standard bringing the number of onboard mic inputs to 48 and processing capacity of 72 inputs to mix.
www.soundcraft.com

Yamaha presented the new Rupert Neve Designs–5045 Primary Source Enhancer, the first product to be developed in the companies' partnership. The RND 5045 is a two–channel analogue 1RU device that reduces the tendency of feedback in live sound applications. The unit enables up to 16dB of additional gain before feedback when conditions allow.
www.yamahacommercialaudiosystems.com

Tannoy displayed its new pendant loudspeaker range. The OCV Series has been engineered for applications where predictable high quality audio coverage is required in high or open-ceiling spaces such as airports or railway stations without compromising clarity, intelligibility and SPL.
www.tannoy.com

Technomad introduced a completely weatherproof, all-in-one, self-casing portable PA system. The DragonFly is adapted from Technomad's rugged military technology for mobile pro audio and staging events. The weatherproof design stands up to submergence when in case-mode. It even floats, with rear controls and screens remaining visible through a clear hatch.
www.technomad.com AM

"From the first note that came out of the Orpheus' outputs we knew we'd made the right decision installing these amazing convertors. They are the audio equivalent of being upgraded to First Class."
Freemasons

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The only interface for the job

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BOSE ROOMMATCH

Fixed Installation Monitors

PAUL WATSON takes a look at some of the stand-out products on offer at this year's InfoComm expo in Orlando, Florida, beginning with Bose – hoping to make its mark on the pro audio market with RoomMatch.

Bose has gone some way to putting its first significant stamp on the pro-audio market with the introduction of its RoomMatch modules, which the manufacturer hopes will add to its already firmly established high-end hi-fi reputation.

Bose claims its RoomMatch modules overcome the acoustic performance limitations of conventional line array and point source loudspeakers. Useable alone or in an array of up to eight boxes, there are 15 different coverage patterns that are creatable from each module. The manufacturer is tagging the modules as 'Progressive Directivity Arrays'.

"It's a little different to a traditional line array," explains Bose Field Engineer Eric Warner. "We've created a new design for our RoomMatch waveguide technology, so we now have five vertical coverage patterns and four horizontal coverage patterns, allowing us to create an array that has progressive coverage as you move from the back of the room to the front of the room rather than having the same coverage from each box. This allows us to map the coverage to the seating plain without hitting the side walls or other places we want to keep it off of."

Each box also contains two new 10-inch woofers and six newly-designed extended mid-range compression drivers, which eliminates the need for a mid/high crossover, which Bose says results in improved vocal clarity and intelligibility. To reduce distortion levels, the woofer uses a proprietary ultra-linear motor, a tapered port, and an individual acoustic enclosure, and the compression drivers have a proprietary Bridge Phase Plug to remove resonant modes without the use of FIR filters or any complex signal processing.

"We designed a brand new compression driver; and each one of those connects to the Continuous-Arc Diffraction-Slot (CADS)," adds Warner. "As a result, when you start building arrays, you get a seamless high frequency coverage, which means you really can't tell where one box stops and the next one starts."

"The size of an array is often dictated by what your SPL requirement is, but you can also lower the frequency which means you maintain the vertical control," explains Warner. "For Bose, this is a very big step; it's a totally new product which we really think is unlike anything any other manufacturer has out there on the market."

INFORMATION

Bose
www.bose.com

AVIOM ALLFRAME

Multi-Modular I/O system

Designed to make digital more affordable and flexible, Infocomm featured the Aviom AllFrame.

Aviom's AllFrame was designed to make digital more affordable and flexible, and uses just a single Cat-5 connection, eliminating the need for masses of cable. When the manufacturer launched its Pro64 line, marketing director Chandler Collison says there was a lot of talking with designers, consultants, and innovators, which helped make it a great technology; and an even more stringent line of R&D went into the making of the new AllFrame.

"The R&D that went into AllFrame was enormous on two levels. We did more market research with customers with this product than we have with any product before, and it was also a huge engineering challenge," Collison explains. "We needed to come up with a way to make all users happy - from the guy who works in hotel ballrooms, to the guy who works in theatres, for example."

At the centre of the AllFrame Multi-Modular I/O system is the F6 Modular I/O Frame, which is a multi-purpose network frame with six field-configurable I/O card slots and integrated Cat-5e and fibre optic connectivity. It can be outfitted to meet the audio I/O requirements of almost every application.

The F6 is powered through either a four-pin XLR connector, a Euroblock connector, or one of the Cat-5e A-Net ports. Installations that use Power Over A-Net require the POA-80 80-watt power supply, and other new accessories for completing AllFrame installations include the PST-80 2U rack tray for mounting multiple POA-80s, the Fan6, which is a replacement fan assembly for F6, and the LabelKit, which includes Trimm label strips for AllFrame I/O cards.

Every AllFrame supports Cat-5e cable runs up to 400ft (120m) between devices, with no loss of fidelity. With integrated fibre optic connectivity, runs can be extended to more than a kilometre (multi-mode fibre) or tens of kilometres (single-mode fibre).

"We keep getting to a point where the digital side gets value-engineered out of the project because it's viewed as a luxury rather than a necessity, especially as the economy has led to people tightening their budgets," adds Collison. "What the AllFrame does is really change that equation. It allows designers and end users to make more efficient use of their hardware resources because it's all modular, and it completely changes the installation cost. The hardware cost compared to analogue is obviously more expensive, but the installation cost goes down so much that the installed cost for the digital solution using AllFrame is in most cases actually less than it is for analogue."

The AllFrame can be used with Aviom's Pro64 network products and Pro16 Series Personal Mixers; and I/O points can be placed anywhere the application requires without affecting signal flow at any point.

"When you consider it supports 24 in and 24 out, it has some real thermal challenges; if it's in a stud wall it's got completely different characteristics than if it's lying out in the open, so a lot of hard work went into that box." Collison insists. "And of course it taps into the A-NET, so just a Cat-5 connection and you're done."

INFORMATION

Aviom
www.aviom.com

8030A 8050A 8040A 8020B

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RUPERT NEVE DESIGNS 5045

Primary Source Enhancer

Removing unwanted background sounds can be a constant challenge to sound engineers, so RND has devised a new unit that might make it a little bit less of a pain.

Following on from the recent Steinberg plug-ins, Yamaha will be distributing the new Rupert Neve Designs 5045 Primary Source Enhancer in North America as of this summer.

The two-channel analogue unit was designed to assist mixing engineers remove unwanted background sounds from bleeding into microphone channels, providing a major enhancement to the primary source of the audio. Under the right conditions, more than 20dB of additional gain before feedback can be achieved; and the rich warmth that Neve's devices are know for is also said to be present in the 5045.

"Obviously Steinberg is our product as well, so we have an alliance with Rupert Neve Designs, and want to take advantage of that in a live sound world," reveals Yamaha's System Application Engineer Kevin Kimmel. "It was under development for some time – I have only been with the company two years, but I know they were talking about it before I joined. We have an engineer in Japan that we refer to as Dr. K; he is the guy who creates our VCM effects, and Rupert [Neve] appreciates the way we find a natural sound and recreate the 70s and 80s boxes in the best way possible. He respects the knowledge and the application, so he and Dr. K got together and worked some magic."

Applications suited for the device include A/V, panel discussions, broadcast, houses of worship, and a variety of other venues and events, though the 5045 is said to especially shine when used in a challenging environment such as with a lavaliere or headset microphone.

The 5045's front panel includes a Threshold, Time Constant, and Depth knob for both of the channels, and push button controls for Process Engage and RMS/Peak. It has two transformer coupled Line Amplifiers, even when the channels are not engaged; and connections are straightforward for the balanced line ins and line outs for each channel. At the back, there are two XLR inputs and two XLR outputs, and because of the transformers, the 5045 will work with any combination of balanced or unbalanced inputs and outputs.

INFORMATION

Rupert Neve Designs
Ⓦ **www.rupertneve.com**

Distributed by Yamaha
Ⓦ **www.yamahaproaudio.com**

DPA D|FINE HEADSET SERIES

Single-ear Headset Microphone

DPA has been putting what its users want perfectly into place with the first of the dFine headset series, says PAUL WATSON.

DPA has introduced the first of its new d|FINE Headset Series, the single-ear headset microphone. The lightweight mic is designed so that it is hard to feel, the idea being that the user forgets that he or she is wearing it; and it's also very simply designed. Stand-out features include its detachable boom, and the fact that DPA can now replace the cable only, separate from the boom.

Bryce Boynton, who works for the sales team in DPA's US division, says half of the R&D that went in was concentrated on gathering feedback from users, and that one of the main things users had wanted to see was a detachable cable, which is why the manufacturer made that a number one priority. Another major thing DPA found to be frustrating for end users was the wandering syndrome of the microphone not staying in place, so some of the R&D took place in hospitals, where various doctors and physiologists advised the manufacturer precisely where to anchor something securely to the ear in an unobtrusive fashion that would eliminate the problem.

Also, the single-ear mic's new ultra-soft spring mount is on a curve, which means the tension is the same no matter what the person's ear size; and it takes no more than a hook to keep it in place, as DPA discovered from its research that it was advantageous to go under the ear rather than over the ear.

"It's more about service than it is about other cable options; it's the same cable either hardwired to your wireless adaptor or with an XLR belt clip, but if this is damaged or destroyed in any way, even though it's reinforced with kevlar, we're now able to replace the cable only." Boynton explains. "There are very little metal parts that need to be moulded in place – just the boom arm itself which angles a distance off of your face; and there's always the same amount of tension, so there should be very little bending and kinking in the mic over time."

DPA says the d|FINE Series has been introduced because many of the current DPA model numbers (such as the 4066 flagship omni mic and the 4088 flagship cardioid mic) were deemed too difficult to remember, being in the four-thousands. The manufacturer also insists that d|FINE's launch has come at just the right time, as DPA intends to develop relationships very tightly with its dealers to make a presence in the industry that it hasn't before, making products that are easier to identify with and memorable for all types of users.

"This is the first of what we hope will be a long line of d|FINE products," says Boynton. "We are hopeful that this new series will be a great success with our existing users, and will also attract new users and clients."

The single-ear mic will ship in September 2011.

INFORMATION

DPA Microphones
Ⓦ **www.dpamicrophones.com**

Studio Designs

JIM EVANS talks with Roger D'Arcy

Established by Roger D'Arcy and Hugh Flynn on April 1, 1987, Recording Architecture has risen to become one of the premier recording studio design companies in the world. This month they will be publishing a history of their designs. *RA: The Book – The Recording Architecture Book of Studio Design* covers all aspects of architectural, acoustic, and interior design of these studios and spaces specifically related to sound – on a project by project basis.

Q: Why The Book?
"Over the years, and perhaps surprisingly, the only available books on recording studio design seem to have been written by individuals with little or no qualified background in architecture or design in the field – we are trying show the detailed architectural/acoustic input behind a successful design with each studio study showing drawings in large format.

This is not a theoretical guide but a detailed presentation of tried and tested techniques as applied to real, built projects – in many of the case studies, the actual drawings issued for construction are reproduced. The examples illustrate not only what we think should be done but what was in fact physically (and successfully) implemented in a wide variety of situations – from small, private project studios to large, commercial land mark studios such as Lansdowne and CTS."

Q: What are the current trends in control room design? How have these developed?
"A noticeable and somewhat disturbing trend is the mere lip service, almost cosmetic, apparently being paid to acoustic design in many control rooms which are increasingly becoming little more than spaces with equipment in. It is a fact that available budgets can make it increasingly difficult to properly address acoustic issues – both of sound isolation and acoustic control within spaces – but with equipment often taking the lion's share at an early stage, the problem is that once the project is up and running, often with funds exhausted, the realisation dawns too late that there is no point having any equipment at all if you cannot reasonably accurately monitor and manipulate what is being recorded or mixed – and without disturbing (or being disturbed by) the neighbours."

Q: Will there be a next generation of recording studio designers, and will there be any work for them?
"We hear an occasional new name on the scene (mainly in the USA – I think each town has half a dozen studio designers) but it must be increasingly difficult to get started. There simply doesn't appear to be a sufficiently broad base of reasonably sized studio projects (project, commercial, orchestral) and adequately funded potential clients to enable the establishment of new, sustainable, and properly managed practices – and the "old-guard" are still hanging on. We are still one of the youngest established practices and we've been going 24 years!

Q: Is there a viable future for professional recording studios?
"Absolutely yes, but not for the mediocre – as should always have been the case really, studios will have to offer access to something special, something that cannot easily be duplicated in the home – large, sound isolated spaces with high ceilings for ambient ensemble playing and drums – high end, esoteric, or vintage equipment with extensive outboard and microphone collections – exotic and interesting locations (well conceived and managed residential studios in such places will always have a potential edge). Finally, I suspect that a well put together studio with all or some of the above qualities will potentially be able to do well regionally where there is no competition – not everyone wants to record (or mix or even master) in capital cities." AM

www.aaa-design.com
RA: The Book – The Recording Architecture Book of Studio Design
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SE ELECTRONICS RN17

Condenser Microphone

The RN17 sparkles, says ANDREW GRAEME, though not in the way you'd immediately expect…

Following on from the success of the active ribbon microphone, the RNR1, Rupert Neve and sE Electronics have got together to create a small condenser mic with interchangeable capsules for different applications and polar patterns, creating, in effect, a completely new range of microphones. The body of the mic has an interesting looking bulge that contains the active electronics and transformer.

The complete stereo kit comes in a very attractive case, with the two mic bodies in their own wooden box and each capsule in a small metal tube and with two shock mounts. The impression of every part of the package is one of absolute quality. Even the little tubes used for housing the capsules are beautifully made with perfectly engineered screw-on caps.

The shock mounts not only look good and feel extremely solid, but are exceptionally effective. Thumping and banging against the mic stand transmitted almost no sound through the mount and, although I was not able to do an A/B comparison with every possible shock mount on the market, these may just be the best shock mounts I have ever come across.

As a result of perfect mechanical engineering, changing the capsules is quick and easy (unlike some mics I could mention!) and obviously a great deal of thought has been given to the hard-pressed engineer, possibly working in the dark on some location recording, where time to fiddle with unusual or badly fitting screw-threads is just not an option. It was a pleasure to 'find' the thread of the capsule first time, every time, and have the thing fitted in seconds.

I used the mics over a one-week period as drum overheads on a jazz trio and in various roles for piano and guitars on a blues band. Once the musicians had packed up everything except the empties, a broken guitar string and a digital tuner that didn't work, I tested the mics using our R&S and HP audio test rigs.

Cardioid

The very first impression, using the cardioid capsules and alongside other small diaphragm condenser mics, was that they were not as 'sparkly' as other similar models. At first, I put this down to a lack of top end, but in the mix, they sounded considerably better and had a 'silky' quality to their sound. Later testing showed that they have plenty of top end and are more or less linear (+/-3dB) up to 22kHz, albeit with a peak between 7-11kHz and useful response up to 24kHz.

The cardioid capsule was remarkable, in that the 90-degree off-axis response was almost exactly -6dB uniformly across all frequencies above 200Hz and slightly less below. Rear rejection was somewhere in excess of 30dB and when used in anger in our live room, rear rejection was just the function of the room reflections. This uniformity of off-axis response resulted in some of the best stereo imaging I have heard.

There is also a hyper-cardioid, which, other than being more directional, sounds remarkably similar to the cardioid. It is linear to 18kHz and has useful response to 25kHz.

Omni

The omni capsule is linear to 18kHz, after which it gently drifts south and continues to have some useful frequency response up to 27kHz. Used on our grand piano, it gave a full-bodied sound that did full justice to the instrument.

The laws of physics tend to hinder the building of the perfect omni-directional microphone, as the body of the mic itself acts as a baffle to higher frequencies coming directly from the rear. For this reason, it is all the more remarkable that the omni capsule, when pointed directly away from a sound source, shows a drop of only 4dB above 10kHz and nothing below. More importantly, at 90 degrees, it shows no drop in response whatsoever at any frequency and no strange resonances or dips. This makes it the ideal candidate as the mid in mid-side recording.

Eights

At this point, I have to mention the figure of eight, as it makes an ideal match for the cardioid and the omni in particular when you are out hunting for that perfect M-S combination, and gave some of the best M-S imaging I have heard. This capsule is linear to 16kHz and drops off at 20kHz. The off-axis rejection at 90 degrees is excellent and, like the cardioid at 180 degrees, when used in the live room, side noises were just from room reflections.

There was absolutely no difference in response between one side of the figure-of-eight and the other and here, as with all the capsules, no hint of distortion.

All the capsules showed excellent bass response, giving a lie to the mistaken belief that small diaphragm mics can't do bass (many cheaper and some specialist models cannot, but that is a different story!) Of course the bass-cut capsule gently slopes off below about 150Hz, to be about -7dB at 80Hz. When used as a stereo pair, two RN17s recording our all-acoustic blues group, gave an excellent stereo image with plenty of bass-fiddle sound, all on their own.

Conclusion

The RN17 gives the user a clean sound in a way that is almost shocking. This does not hit you at first and you may even be tempted to think that they lack top end – but when you work these mics with a good EQ, you get to hear just how pure the output really is.

You only really know if a microphone is any good or not, when it comes to mixing and in particular, when you start throwing EQ around the place. Those sparkling highs from some microphones that impress so easily on first listen can refuse to sit in the mix and may even start to 'spit' when boosted. The RN17 sounds neutral and you might even think that it is without character – until you start to twiddle knobs and push faders. Then you get all the character you want.

This microphone, we are told, is to be followed by a tube mic – the RNT-1. This could get interesting!

INFORMATION

£ GB£949.00 (exc.VAT)
Ⓐ sE Electronics/Sonic Distribution, 3 Hunting Gate, Hitchin, Herts, SG4 0TJ, UK
Ⓣ +44 (0) 845 500 2500
Ⓦ www.seelectronics.com

THE REVIEWER

ANDREW GRAEME is Studio Manager at the Byre Recording Studio in the UK (www.the-byre.com).

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UNIVERSAL AUDIO 4-710D

Mic Pre-amp

Universal Audio has clearly been listening to what its customers want with the 4-710d, says SIMON TILLBROOK

The Universal Audio Twin Finity 710 pre-amp has gained itself a great reputation with many fans and awards to prove it. The only complaint you ever seem to hear from owners and users is that they wished they had a pair, or more of them, to widen the possibilities and ranges of use. It seems that Universal Audio has been listening.

This answer from Universal Audio comes in the form of the 4-710d, with UA packing quite a lot into this 2U box. What we have are four Twin Finity 710 microphone/line pre-amplifiers with their solid state and tube blending capabilities, along with an additional four line inputs that can feed the eight channels of analogue to digital conversion.

The four Twin Finity 710 preamps also have a basic compressor based on the well-known and respected UA 1176, as well as a switchable insert point.

A good look over the Universal Audio 4-710d gives us a good understanding of what's on offer here.

Entry Points

The four channels of 710 pre-amp each have balanced XLR I/O (mic and line levels on input), plus insert sends and returns on balanced TRS sockets. The insert return TRS socket can also be used as an additional line input, and because this insert is half-normalled, you can use the insert send as an additional simultaneous line output. There are also the four additional line inputs, feeding the four 'bonus' AD convertors.

The eight AES/EBU outputs are delivered via a 25-pin TDIF D-Sub connection, plus two ADAT optical connectors. Both the ADAT optical sockets will simultaneously supply eight channels out at sample rates of 44.1kHz or 48kHz, and when sample rates increase the S/MUX protocol splits the channel delivery between the two sockets.

Word Clock I/O completes the rear panel audio options.

On the front panel are four unbalanced JFET Hi-Z instrument inputs for each of the four 710 Twin Finity preamps. When you plug into these TS sockets, the rear input connection options are bypassed in favour of the front panel connection.

Gain Control

Each of the four 710 Twin Finity pre-amps has the same set of functions: a lit VU meter with selections for output, gain reduction, or drive (input level to tube stage); mic/line, phantom power, -15dB pad, low cut (75Hz), and phase reverse; insert and 1176-style fast/slow compression selections; then input gain, output level, and Tone Blending.

This final rotary control in this collection of three is the Universal Audio 4-710d's trump card. There are two input stages, Universal Audio's solid-state transimpedance design and a Class-A tube 285VDC input that uses a single 12AX7 valve. We can use either of these input stages or, more interestingly, blend them together with this rotary control for a wide range of sonic possibilities.

The output of each of these stages is then summed together to form a single variable output signal.

Digital Control

On the right hand end of the unit you'll find digital output options. Each of the eight converters has two LED indicators – a green one for between -37 and -6dBFS and a bi-colour one for -6 to -1dBFS (yellow) and red (>-1dBFS) with peak hold. There's a selection switch for 16- and 24-bit, a multi-position rotary selector for sample rate (44.1, 48, 88.2, 96, 176.4, 192kHz, and WC), and a Lock LED to confirm word clock sync.

You can apply an analogue limiter to the eight converter inputs with the Limit selector. Threshold is 17dBU (this equates to -3dBFS) with an infinite ratio.

Attack is 0.075ms with a 100ms release.

In Use

There are many people familiar with the Universal Audio 710 Twin Finity pre-amp that are constantly telling me how much they love it, and I can certainly see why. As a simple pre-amp it is what we have come to expect from Universal Audio, with its high quality and solid sonic capability. The tone blending is more than a gimmick or just a nice idea – it opens up a fabulously wide range of sonic possibilities.

The two input stages are very good in their own right. The solid-state stage is clean, crisp, and delivers a good bit of bite, whereas the tube stage has all the lower harmonic distortion and smooth colouration so many find appealing.

Varying the level of input drive and blending gives a truly flexible palette to draw from.

The addition of the 1176-based compressor on the 4-710d is a very welcome one. UA has obviously listened to how many engineers use the 1176 and the two options provided are well programmed. I never found myself wishing for more control when it came to basic dynamic processing. The addition of the insert routing, which is another great feature, meant I could simply insert and A/B when finer adjustment was necessary.

The converters on the Universal Audio 4-710d are very crisp and great quality. They offer a good transparent conversion process that translated all of the blended sonic components well.

Conclusion

The Universal Audio 4-710d is an example of what a manufacturer can produce with such a depth of experience to draw upon.

This is an extremely well thought-out device, and the evidence to support that argument is here in spades.

A single Universal Audio 4-710d would be a wonderful front end to any system, but four would allow for real tracking and live sound workflow virtually anywhere, a fabulous feature rich package all in a 2U box. AM

INFORMATION

£ GB£2,039.00 (inc.VAT)
Ⓐ Universal Audio Inc.
Ⓦ www.uaudio.com
Ⓐ UK Distributor: Source Distribution (HHB)
Ⓣ +44 (0) 208 962 5080
Ⓦ www.hhb.co.uk

THE REVIEWER

SIMON TILLBROOK is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.

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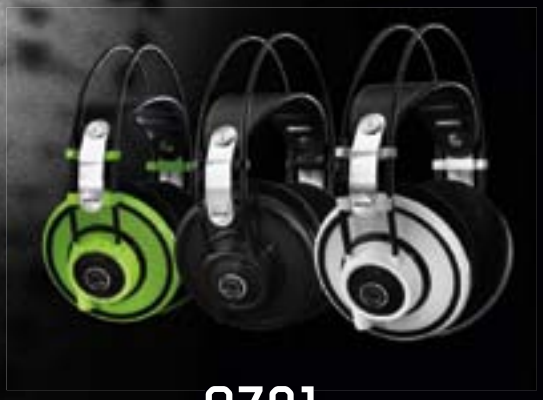

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HARMAN

SENNHEISER MK4

Studio Condenser Microphone

Sennheiser seems to be expecting great things from the small-price-big-noise MK 4, so JERRY IBBOTSON finds out how well it stands up in test against his tried-and-true selection.

Time flies doesn't it? Only a month ago, I was writing about the Focusrite Scarlett USB audio device and what great value it offered. If I recall, I rambled on about how I could have done with something like that when I started out... blah... blah... blah...

One month on, and I'm testing a new microphone from Sennheiser that promises something similar; namely high performance at a relatively low price. The MK 4 is Sennheiser's first large-diaphragm, side-address microphone. The company say that it's aimed at "professional users in project studios" but is also at home on stage.

The first thing you notice when you slip it out of its little box is how stylish it looks. I know this shouldn't really count when talking about audio hardware, but it does reassure you that the designers have taken the time to make the thing look desirable. It's also reassuringly well made, with a heavy feel and nice silvery finish to the body (technically I think it's nickel but it looks silver to me).

One thing I spotted straight away: no dip switches for a pad or roll off. According to the designers, they invested all their money in getting the best sound out of the microphone, in order to keep the price down. But does that mean this is nothing more than cheap and cheerful?

Sennheiser certainly doesn't think so, stressing that it's developed ways of manufacturing the MK 4 in its German factory that reduces costs while maintaining quality. A good microphone made on a budget, rather than a cheap mic. From the material I've read and the people I've spoken to, this is a product the company is expecting great things from. On one of their press releases, they describe it as, "An unpretentious microphone with an outstanding sound."

Techie Specs

The technical specs are: a one-inch diaphragm and an elastically mounted capsule. The maximum SPL is 140dB and it has a self-noise level of 10dB (A). It comes with a travel pouch and a neat little plastic mic clip to attach it to a stand, though I found this a little too short to allow the mic lead egress without having to bend. I guess a right-angle XLR connector would sort that. I also got to play with a Sennheiser suspension cradle, which is beautifully made and as stylish as the Mk4.

A microphone like this is likely to be used in a range of ways, so I tested it in a number of different scenarios. Firstly, I hooked it up to a Marantz PMD 661 portable recorder for a "studio in a hotel room" test. I recorded myself reading some text from a book and this was done in a quiet environment, though not a vocal booth. The results were very good – warm and clear but with a little sibilance on my voice.

Let me put this into context: I recently did some recording on an AKG C2000, which has a similar design and price to the Mk4. In that test, I wasn't keen on the sound of the AKG. To me (and there are plenty of AKGs that I own and love to bits) it sounded budget. Even in this rough and ready test, the Sennheiser was definitely above that level of audio quality.

The next test was in my vocal booth, used for recording voice-overs, actors, and sound effects. I did a quick bit of online research and found that one of the mics in the same price range as the Mk4 was the SE Electronics Z3300a, which I just happen to own. I hooked this up, along with my recently acquired SE Z5600a II tube mic. This is a whole different price range but allowed me to conduct a three-way test. And I just love hearing it.

The guinea pig, once again, was me reading from a novel (am I allowed to plug my own book?). I read the same passage through each microphone in turn and compared the results.

Unsurprisingly, the Z5600 was the nicest sounding. To be honest, if it wasn't I'd have been extremely upset (and so would my wife, who wrote the cheque for it). But the question now would be how close the other two would be to it and to each other. The 3300 has a sound that I am very used to hearing and even though it's been replaced in my affections by the 5600, it can still hold its head up. A neutral kind of sound with good handling of any sibilance in my voice.

The Mk4 had more punch to it, with a nice lively character. There was a warmth to the recording that I couldn't hear in the Z3300 and it definitely sounded more "forward", as if I was putting more effort into my reading (which possibly, knowing that this was a shiny new microphone, I was). This, clearly, is no budget bit of kit.

Another Ear

To get a second opinion, I roped in a friend who happened to be on-site at Media Mill, editing some interviews I'd recorded for a project of his. As well as being the grooviest vicar in the Church of England, my old mate Simon Stanley is a former colleague of mine from BBC Local Radio days. He's also a talented musician, so knows one or two things about what sounds "good."

I played him back the three recordings, without saying which microphone was which. And his verdict? He preferred the punch of the MK 4 to either of the others, including the (considerably) more expensive one. Oh.

Of course, there is much more to a great microphone than just a controlled voice test, and my opinion is still that the Mk4 compares more to a mic like the Z3300 than the Z5600. However, it does prove that the Mk4 is a great bit of hardware. It's at least as good as anything else out there for that price.

THE REVIEWER

JERRY IBBOTSON runs Media Mill, a York-based audio production company started in 2000 that specialises in sound for video games. Prior to this, Jerry was a BBC journalist for ten years, ending his spell with the Beeb as a reporter and newsreader at Radio One Newsbeat.

INFORMATION

£ **GB£299.00 (inc.VAT).**
Ⓐ **Sennheiser UK Ltd., 3 Century Point, Halifax Road, High Wycombe, Bucks, HP12 3SL**
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Equally at home in live or studio applications, these little side-address modular condensers are flexible, great sounding, and well-built.

Shure's truly unique Beta 181 ultra-compact side-address condenser microphone is an eye catcher. It attracted more than a few glances upon its debut at last year's AES Convention in San Francisco, ultimately enough to win a 2010 PAR Excellence Award. Featuring a gunmetal blue preamp/body and four variations of capsules – 181/C cardioid, 181/S supercardioid, 181/O omni-directional, and 181/BI bi-directional (figure-of-eight) – the Beta 181 is a modular, flexible microphone solution for both live and studio applications.

SHURE BETA 181

Compact Side-Address Condenser Microphone

Features

The Beta 181 is small, ideally designed to fit in positions where you normally wouldn't fit a side-address condenser: it is 4.9 inches long, 1.36 inches at its widest point (the lollypop-style capsule), with a 0.8 inch diameter body. It can handle high SPL levels; max. SPL (1kHz at 1% THD with a 1000Ω load) of the four capsules range between 149 to 153 dB SPL. Frequency-wise, based on Shure provided specifications, each capsule is relatively flat from 50Hz to around 3kHz, where each has a significant presence peak ranging from +3dB (181/BI) to +7dB (181/O) until a rather sharp drop-off, across all capsules, at 15kHz. Their range-wide upper-mid bump provides the user with what I'd describe as the desirable 'Beta Sound', the one that works especially well in defining transient sounds (string plucks, percussion, vocal detail, etc).

The most notable physical characteristic of the Beta 181 is, of course, its interchangeable capsules, based on a knurled ring/alignment key/alignment groove design, so changing capsules is extremely easy at any stage of microphone placement. Simply turn off phantom power, unscrew the cap's knurled ring, slide the alignment key (on the front of the cap) in the body's key groove (or out), and then tighten the selected cap's knurled ring down tight. I must note how extremely rugged and trustworthy these interchangeable capsules feel.

Best of all, Shure does offer these 181 capsules for individual purchase. For example, if you already own a pair of complete Beta 181/Cs, you can buy two extra 181/O capsules for £282 each; 181 bodies are also available for £220 each.

In Use

Over the span of several months, I used a collection of Beta 181 microphones – a pair per capsule type for a total of eight microphones. Pattern-wise, each of the capsules offered textbook accuracy, performing as you would expect in all applications I threw their way, in both stage and studio environments: drums (with 181/C, 181/S and a pair of 181/BI in stereo on snare, toms, kick drum/beater side, hi-hat and ride), percussion (181/C and 181/O on shaker and tambourine), acoustic guitar (181/C and a pair of 181/O), guitar speaker cabinet (181/C), and both male and female vocal (181/C). The latter vocal applications were probably the least ideal of all placements, as I would normally choose a larger diaphragm condenser microphone for close-miked vocals; yet, especially in live applications, using the Beta 181 on a vocal was physically unobtrusive, and the performers seemed to enjoy using the visually unique mic, commenting about it. As a matter of fact, it performs well in a stealthy way (with little flash and fanfare), simply doing the job of a well-built, high-quality condenser microphone that can take high levels of SPL.

But its physical attributes are what make it so easy and enjoyable to use, in a number of ways. Once the Beta 181 bodies are in place, trading caps in a hurry is a breeze. Being a relatively tiny side address condenser, I was able to get it in tight places that would normally be impossible, or imposing to the musician (such as a Beta 181/BI between snare and hi-hat).

Summary

Whether live or in the studio, the Beta 181 would serve you as a very multi-purpose condenser microphone thanks to its modular design. As such, it is a very interesting addition to Shure's venerable Beta Series. Multi-tasking pro audio types will want at least a pair of cardioid 181/Cs, a supercardioid 181/S cap or two if working live, then a pair of omni 181/O caps, two 181/BI caps for Blumlein stereo apps… collect 'em all, Shure style!

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THE REVIEWER

STROTHER BULLINS is the reviews and features editor for *Pro Audio Review*.

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Limbo

JOHN BROOMHALL talks to BAFTA-nominated Martin Stig Andersen of Playdead games about his first foray into game sound, the spooky, slightly surreal *Limbo*.

Limbo took the videogame world somewhat by surprise. Though it features a relatively simple presentation technically, this downloadable XBOX videogame is widely acknowledged to punch high above its weight in creative expression. Intriguing and compelling, it is at once strangely melancholic and darkly beautiful. The player controls the movement of a small boy who awakens in the midst of a spooky forest from and through which he embarks on a journey in search of his sister. However, his path is littered with gruesome traps and puzzles giving rise to what has been coined 'learning by dying' gameplay. Though essentially a 2D scroller, it has nevertheless been proposed by some that *Limbo*'s stunning monochromatic artwork and grainy visual effects combined with its beguiling soundscape are 'videogame as art'.

Limbo's exquisite sound and music certainly bear testament to a deftness of touch and some true sound artistry. Yet its elegant simplicity and uncluttered clarity belie a sophistication of thought and approach that only becomes apparent in conversation with its sole creator, BAFTA-nominated Martin Stig Andersen of Playdead Games who originally saw footage of *Limbo* in a concept trailer the game director had posted on the Internet. Totally captivated, he found the visual expression of a sombre, blurred universe reminded him of themes in his own music in which he was using real references to create something very abstract. Andersen: "There's a lot of ambiguity in it that chimes with my primary background in acousmatic music where I would extract musical values from something as unlikely as traffic sounds. The ear knows the results are from everyday life but they are blurry abstract concepts musically. I saw the boy in Limbo running on the ground in that concept video but he was just a silhouette so each player could have their own inner vision about how the boy looks and sounds. There's a lot of space for your own interpretation and projections."

A Close Collaboration

Some time later when he heard that Playdead's game director had obtained Danish state funding Andersen made contact. The promise of an iterative experimentation/decision-making process – the antithesis of large console title productions – was something Andersen found both engaging and inspiring. Moving his studio to Playdead's offices he embedded himself in the team and tech for a year of intense collaboration. Andersen: "What I'm best at is going to a new job challenge and saying, 'okay, I don't know how to do this – I have to find out'. That's how I can develop and renew my work – but of course, I did come with some ideas. I had had these thoughts about making it sound like old film and also making the boy relatively loud so the surroundings would appear silent – but it was only half way through the project that I became sure I had the right approach.

"I learned some interesting things. Trying to make *Limbo* sound like an old film, I put everything into mono but discovered I couldn't engage myself with that sound. It's because I was living in 2009 – it was just not immersive enough. I see *Limbo* as such a tiny world – I was trying to reduce all the sounds to something very simple and thin sounding – very reduced. I distorted sounds and then afterwards, expanded them again, really spatializing them – almost anti-phase. I ventured into using antique audio devices – wire recorders, spring reverbs, and tape recorders. In linear media you can make your mix from moment to moment whereas in a game, the sounds might always be mixed differently. One thing I discovered using old machines was that they created a homogenic sound. Running all of my sounds through an old tape recorder made them sit very well together in the mix. With my own bespoke-recorded physics sounds, I found when I put them in the game they sounded too real – the surface of the sound didn't fit the image. So I ended up running them through an old spring reverb. I put the reverb to zero so basically I was just using it as a hardware filter, which made the sound narrow and thin – all the bottom would disappear. Because the sounds lost a lot of their main actual ▸

identity and clarity, they suddenly became more generic – I could use the same sounds for a metal box or a wooden box. It all contributed to making the world very small and defined.

"A lot of the things I do are essentially mash-ups or paraphrases – it arises from working with electroacoustic music for a lot of years. I can take one sound and it doesn't really matter where it comes from because I'm not using that sound as it is. I might just extract the texture or colour and then use it to transform another sound. It leads to a slightly un-natural but useful quality allowing me to create an audio world that is generic and yet unique."

Anti-Video Game Detail

Indeed, both Andersen and the game director's ambition was to create a soundscape that simply didn't sound like a videogame – to avoid any replay that revealed the mechanics behind the sound. For instance, the boy's footsteps system is based on some 15 different 'game states' – technically track-able conditions that once in effect will logically determine the combination of sounds and their volumes to be used at any given moment – say how long the boy has been on a certain surface material, how long a time running, and in which area. However, footsteps are pretty much the only sounds the character makes with Andersen feeling that in third person games the player can identify with the character but if he/she starts to make noises, a disconnection is created.

The same level of detail exhibited in the footsteps system also applies to ambiences and spot FX. Composite sounds are broken into particles, which Andersen refers to as 'grains' e.g., the footsteps are broken down into heel and toe to provide many more combinations and variations, walking/running speed defining how close together they play. Sound events such as rain may only be two seconds in total but cut into ten pieces sequenced together randomly – with random volume and pitch – all played over background textures and ambiences. Many of the ambiences consist of a rough, dry monophonic texture consisting of say 20 small grains which are mixed against a 'smeared' 3D transformed, spatialized version of the same sound. Andersen: "It's kind of schizophrenic. It sounds really close and yet really far away at the same time, but the randomness and variation makes things come alive."

Meanwhile, the music of *Limbo* is so ambient and blends so beautifully with the sound and graphics that some reviewers have claimed there is none there. Andersen characterises it as 'appearing to stem from the environment'. For instance, when the character meets the insects they become the main instrument of the music. But for Andersen, the overall narrative structure he has built into *Limbo*'s audio is his biggest contribution to the game: "No one really pays attention to this aspect of my work so I'm really happy when people ask about it because for me, the overall framework plays a very important part. I was trying to achieve the creation of a world structure with the audio going from quasi-realistic sound that you hear in the forest – naturalistic – then as the boy progresses through the world, things become more and more abstract, almost transcendent. And you might have the most horrible moments – really traumatic – and the sound will suddenly turn into something melancholic contrasting with what you see. It makes sense to me to say, 'ok, so this boy travels through all this violence and I have to respond to this in some way' otherwise people would just get habituated to it. So what I wanted to contribute was more along the lines that the boy got habituated to the violence – rather than the player, with the player almost wondering how to feel and with the music sometimes almost representing forgiveness.

"*Limbo* is really distinct, something in itself. Despite real world references, the sound is helping to make a limit – a wholeness to the experience as you go from A to B – a development and an ending – so yes, it does have a narrative quality."

For a first foray into game audio, Martin Stig Andersen has certainly made waves. Now working on his second Playdead title, he has an even deeper integration within the team, contributing from day one to a new production and with ample time for experimentation, many fans will be eagerly awaiting his next offering. AM

Portal 2

Valve's *Portal 2* has garnered rave reviews for its creative and original mix of humour, game play, and sound design. RICHARD WENTK talks to Valve about Reaktor, breaking glass, and potatoes.

Not many games become iconic, but Valve's original version of *Portal* stamped geek culture with unique catch-phrases – "the cake is a lie" – and blended original game play with a strong script and unusually powerful characterisation.

In other hands, the game could have stayed stuck as a simple problem solver. But literary references and a murderously personal antagonist created a product that was described by *Wired* as one of the most significant games of the 21st century. It also caught the attention of academic sociologists and has been exhibited at a contemporary art exhibition at the Smithsonian Institution.

With this kind of enviable reputation to live up to, the sequel was widely anticipated. So how did Valve go about creating Portal 2, and enhancing the strong sound design of the original?

Mike Morasky, whose other credits include visual effects supervision on *Lord of the Rings* and the *Matrix* series, has been working as an in-house composer at Valve since 2003. He took some time to talk to *Audio Media* about tools, technology, and Valve's unusual creative workflow.

In The Flow

As Mike explains – "Valve's production methodology may be unique. We don't have managers, and we don't have hard boundaries between disciplines. So it's a very organic, and very adaptive work environment. Developments or changes in direction can be driven by a single individual, the entire team or – as often happens – by feedback from our near continuous play-testing."

While play-testing is critical, it's not the entire story. Mike continues: "Play-testing and team collaboration are the main tools we use to check if the game is succeeding. If it isn't, play-testing can help highlight what needs to be changed. There's no single formula for the elements of game development – and that's just as true for the sound and the music as for everything else in the game. Because of the freedom we work with, we try to stay integrated with the rest of the team as closely as possible. Organic communication and idea sharing between artists keeps development moving, but also keeps everyone on the same page."

According to Mike, this loose structure defines how the sound designers and composers are organised – or not. "In general we try to get a version of the game working and playable as early in the process as possible. Everyone who's working on music and audio can create their own assets. They're responsible for testing them in a working copy of the game before submitting them to the main production. Our system doesn't require long compile times or assistance from engineering, so our artists can work quickly. When they decide a particular sound is needed they can create it, refine it, and then submit it to the database used by the rest of the team, and by the testers. So we're all free to develop new ideas and get them in front of other people very quickly."

In practice this means the project design is modular but open, with constant feedback and creative interaction between different creators. "The game implementation is split into groups, and ideally one of the audio team will have been part of each group designing part of the game from the start. But the development process can be very fast and organic. We can get requests for audio from talking to an artist in the hallway. We also get them in a more structured way if we're having a more formal meeting. Or by discovering for ourselves what the game needs – which is something that happens a lot.

"Really, it's a kind of structured informality. We don't have rules or well-defined roles. But we definitely have systems to divide and conquer what needs to be done, and we all decide as a group what approach makes the most sense. And we can make changes fast. If one approach doesn't seem to be working, we can make adjustments almost instantly, because we don't need to seek approval from supervisors or buy in from subordinates."

This flat hierarchy makes it easy to fold in the best ideas, wherever they're from. "At Valve, everyone is encouraged to participate in all aspects of the game design. As sound designers and composers we create the sounds. But we also get feedback and input from anyone interested in each part of the game. And the opposite is true; we provide input into the entire process and comment on other parts of the workflow. So sometimes we'll push to add more audio opportunities in the main game design."

The result isn't just original sound design, but quirky, creative set pieces. As Mike says, some of the interactive music, like the Faith Plate fling cues or the Lazer Catcher ensembles are particularly unique to Portal 2. "There's also a Turret Opera at the end of the game, with an auditorium full of killer turrets singing an Italian aria. That came about slowly and circuitously. In fact it only really came together right at the end of production."

Bang On A Can

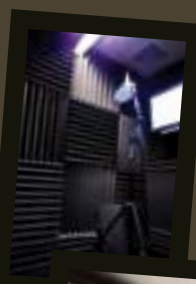
A quick tour of the Valve studios shows that rocks, rubble, wood, glass, and old cans are often used for instant Foley. Is Foley done in-house? Mike explains. "Mostly, yes. For example we had an all-day glass-breaking field recording session. We must have destroyed a few hundred pounds of large panes of various different types of glass. ▸

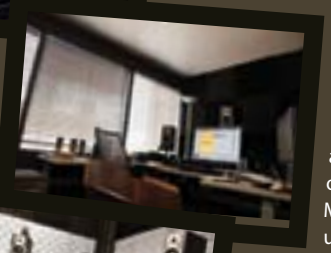
The results were fantastic. There are some critical narrative moments that really pop because of what we captured."

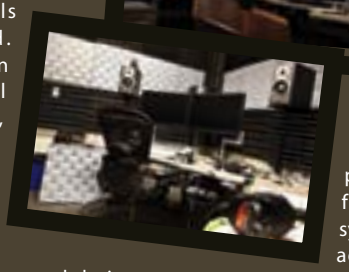
If the workflow is unusually organic, the technology used is mostly off-the-shelf. "The signature synthetic voice overs – especially the one by opera singer Ellen McLain, who voices the GLaDOS character – were done in Melodyne. But we also worked hard to achieve the various styles and spaces that the dialogue is presented in. GlaDOS and the new Wheatley character are mixed as if they're in your head. But they're also affected by the reverb of the space you happen to be in, which is pretty unique to Portal. We deliberately change the depth and detail of the soundscapes to emphasise the feel of the various locations, and the immersive quality of the game.

"Otherwise, the tools are mostly standard. Each artist makes their own selection, but it's the usual list of names – Avid, Nuendo, Live, Altiverb, Waves, iZotope, Sound Forge. For me personally, Native Instruments Reaktor played a big part in the music."

Because of the structure, sound design is split across different studios in the main Valve offices. "Each artist has his own audio suite in the building, fitted out to their own specs. Two of the studios have isolation booths for tracking temp dialogue and recording Foley. We are also in the process of designing a larger mixing stage for reviewing and working on projects in larger groups, but that's still a work in progress. Currently we do most of the work in the office studios. Sometimes we go out of house to record final dialogue, or for an extensive Foley session. All of our artists have portable field recorders..."







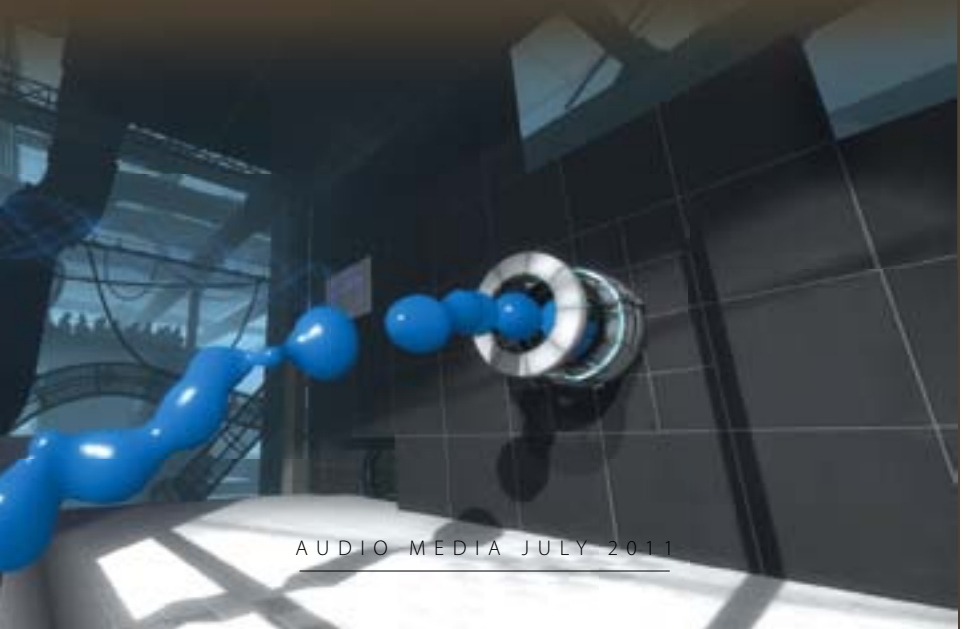
Putting It Together

A key problem for any game company is performance and assembly. The sound and the music have to be cued, sometimes modified, and pre-selected by context. Games companies have developed various solutions, but there's no single off-the-shelf answer.

Valve has created an in-house assembly system that combines elements of play-out and automation. Is this a key part of the Valve success story? Mike: "For Portal 2 we developed an open, scalable sound operator system that allowed us to tailor and customise our interactive audio and music to match the in-game circumstance. It's actually a patchwork of systems. Many were usable across much of the game without changes. But when a unique problem appeared, the fact that it's an open system meant we could adapt or add features without needing to get help from our engineers. And when we do need core technology, it's neatly modularised so that we can add new features quickly while minimising the risk of ripple-out bugs. The source engine also has a large audio feature set, all controllable via the new system."

The result has been enthusiastically received but it's going to be a while before there's another sequel. "We've just finished another game called *Meet the Medic*, which was released in June and is part of our uber-update of *Team Fortress 2*."

And as for *Portal 2* – who knows if the rumours of a sequel are a lie..?



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Sound Matters

with Phil Kovats (Audio Lead, Naughty Dog/Sony PlayStation)

JOHN BROOMHALL catches up with Phil Kovats as he prepares to give the audio keynote at this year's Develop Conference.

Phil Kovats is yet another sound practitioner who has eschewed a more traditional post-production career path in favour of game audio's apparently bright and creatively satisfying future. Following successful stints in film and television post-production as well as audio design work for movie trailers (*28 Days Later*, *Night Watch*) and DVD collections (*Lord of the Rings: Fellowship of the Ring*, Disney-Pixar's *Monster's Inc.*), he first ventured into videogames in 1999 when freelancing at Novalogic (*Delta Force* series, *Tachyon: The Fringe*). It was whilst working at Technicolor as a Supervising Sound Editor in 2004 that he decided to turn his entire focus to videogames, eventually joining Sony PlayStation at the Santa Monica Studio as Sound Design Manager in 2006. After leading and participating in a number of successful audio projects, both large and small – as well as receiving numerous award nominations and wins (including the 2009 BAFTA Best Use of Audio award for *Uncharted 2: Among Thieves*), he headed for Sony developer Naughty Dog full-time to help guide their audio future.

Kovats: "Moving to games was by no means a rash decision. I was finding everything happened so fast in TV – you'd have a week or two days and that's it. Whereas it seemed like in games there was an evolving, organic process and as frustrating as it could be at times (because sometimes things just don't work like they're supposed to), there appeared to be more creative freedom. I was also finding parallels between mixing for DVD/home theatre and mixing for games. I was gestating about it, so when Sony's Dave Murrant approached me saying he thought I should be doing games 100% – it made a lot of sense to me – it solidified my thoughts because I really respect him. The key point is I have a lot of passion for games and it's a lot of fun for me, despite the frustration at times. Even the worst days don't suck!

"As games get more complex, customers desire more interesting experiences. As graphics and physics become stronger, there's going to be an exponential need for more content, and more intelligent content. So we have to figure out how to create technologies and solutions to make that work within the budgets we're going to have. Creating the right soundscape for a movie – whether a *Transformers* or a *Brokeback Mountain* has no real technology bar, but in games everything is interactive. Everything needs to happen at a moment's notice, and whether it's a small downloadable game, or a large block-buster title, we are constrained by size/memory limits. Meanwhile, when you're creating an epic adventure like *Uncharted* you really want to be able to focus on things like a movie does. If the bad guy throws you on a table and suddenly you're heading down towards the revolving table saw, then obviously the most important mix component is the screeching, grinding, razor sharp blade that represents your imminent death! You don't care about the wind or the knocks of the wooden structure or anything else. As you fight your way off that bench and the threat is reduced, the saw sound can fade back in the mix or even out completely. Here at Naughty Dog, we have four stages of volume – in our sound banks, in our meta-data structure, our in animation system, and in our final game mix snapshots. We can break out as many sub-mixes as we see fit. There's no real limit. We have to create things that are manageable but we really feel that, just like any good film mix, you start with all this really great interactive game audio content but it's when you start pulling down the virtual volume faders, you start really seeing what's there and making intelligent mix decisions based on the story.

"Let's say you're walking through this forest and as you come up to an old ruin, the game director wants it to seem a little bit darker, even though visually the sun is streaming through the trees – he wants the player to feel uneasy… We know we can do this with sound. It's not something that has to be driven by visuals – if we work together with the creative directors, we can really get into that sub-text.

"We're at a point in game audio right now where technology is not really hindering story-telling but enhancing it. The opportunities that we have to make great game audio right now, working with these fantastic stories that are offered to us, have let us become true sound artists. We can create new experiences no one else has had. A lot of my passion derives from that – being able to create a really great audio experience – to make myself smile (even though I'm my own worst critic). That's where we're at now in games. What it comes down to is what do we do with it? Where do we go with it?"

For full programme details and booking information, visit: www.developconference.com

Audio delegates at the develop conference in Brighton can look forward to hearing more from Phil Kovats on July 21, 2011.

Making Mobile Music Work

Niklas Hed of Rovio Mobile, famed for its *Angry Birds* download hit, talks about passion for sound no matter the medium.

'When we got the first sound working on *Angry Birds*, It was a magical moment," said Niklas Hed, COO of Rovio Mobile in Helsinki. "The game just came alive in our hands."

Niklas heads up the Finnish firm behind one of the greatest successes in gaming in recent years. Rovio has been around since 2003 but it was with *Angry Birds*, downloaded a staggering 250 million times, that it became a household name.

Game audio is something that Niklas is passionate about. "It doesn't matter if it's just a handheld or mobile game," he says, "Sound is so important to creating a virtual world. And you don't need to use 7.1 surround to tell something."

If you're one of the many millions who've played *Angry Birds*, of even just heard it being played, then chances are you can hum the game's theme tune, written by Finnish composer Ari Pulkkinen. But Rovio boss Niklas Hed says the developers were keen not to make the game sound annoying or repetitive.

"We didn't want people getting annoyed and turning the sound off," he says, "so we only have the music playing in the menus. When you're playing the game you only hear the sound effects. It gives the music more impact and lets the other audio do its job."

And if you've ever wondered what the pigs are saying, he has the answer. "The voices of the birds and pigs are ours – we had a few beers one evening and recorded ourselves. I think there might be some Finnish swearing in there somewhere."

Anyone who's ever worked on a mobile game will know of the particular constraints that handheld devices throw up – chiefly a lack of memory space for audio samples. But Rovio doesn't let this hold them back, "There are restrictions but we still really concentrate on our sound, even if it is 'just' for mobile. And we make sure the music and effects are tuned to work well on mobile devices."

As proof of how seriously the team take their sound, they've just bought a couple of dozen (they've lost count) sets of Genelecs for their Helsinki HQ. "We'd just moved into our great new offices and thought, 'Oh no, we've got no sound!" So we installed Genelecs in every single room in the building, including meeting room. Now, when we're working or showing stuff to visitors, we're not playing the audio on TV speakers but through the Genelecs instead. We also wanted that association with quality, which is what Genelec provides."

So, with all those millions of downloads, what's next for Rovio? "We do have one or two releases planned for later this year, but we're not going public on those just yet. We also have more updates for *Angry Birds*. One big thing is that we're working on social gaming; integrating our games into players' accounts on social networks like Facebook and Twitter, so they can link up and play with their friends." AM

www.rovio.com
www.genelec.com

GENELECS GET ANGRY

Mika Makilaakso of Genelec on the Finnish collaboration that produced *Angry Birds*...

Mika Makilaakso, Genelec's Sales Manager in Finland, is understandably proud of the tie-up with Rovio. "They're a great Finnish games company and we're a great Finnish speaker company, so it's brilliant to have this co-operation," he says.

The speakers of choice for Rovio were Genelecs 8020 and 8040 active monitors, in both stereo and surround configuration. They've been installed around the Rovio HQ at Espo, near Helsinki; even in the lobby.

"They wanted the best audio quality possible to show off their work," says Mika. "It's not strictly about audio creation but about being able to show off their work in the highest quality to anyone who sets foot in their building."

It may seem overkill to play mobile audio through monitors like the Genelecs but Mika begs to differ. "Yes, there is some irony in these being games. But when we first played *Angry Birds* on the iPhone through the Genelecs, we were amazed how good it sounded.

The deal is seen as a partnership as much as a simple installation job. "Rovio has a great approach to sound and it's been great to have this co-operation."

Level Up

Loudness Standards For Games

Sony PlayStation's Garry Taylor, Microsoft Xbox 360's Scott Selfon, and Radical Entertainment's Rob Bridgett make some noise. JOHN BROOMHALL listens in.

Ever experienced one of those speaker-popping, ear-bursting moments caused by a wild mismatch of levels when switching between TV or DVD player to game console? Or between movie playback and interactive content on the same gaming device? How about from game to game? Or even (and least forgiveable of all) having to dive for the remote control between the cut scenes and gameplay within a single videogame title?

Annoying, isn't it? But be encouraged, the industry's major players are all too aware of the issue and are systematically addressing it…

Garry Taylor: "Historically, just like the music industry, we've been subjected to something of a loudness war – especially on PS2 where we were always fighting to get our content as loud as the old PS2 start-up sound which was always played at full volume! But in the last couple of years that mindset has been changing. Our main concern is to give consumers a consistent loudness experience through all PlayStation activities – games, films, videos, TV, and music. We think consumers prefer titles to have more headroom – more dynamic range – depending on the type of playback system they're listening to our content on…"

> "…even a mix that seems perfect on one listening won't remain identical for all gameplay scenarios."

Scott Selfon: "Unlike linear media, games are being mixed in real-time. So even a mix that seems perfect on one listening won't remain identical for all gameplay scenarios. Additionally, mixing in traditional media has always been a post-production process – the film is complete, the audio elements have all been created and brought together, and the engineer can carefully craft a mix that precisely balances those many elements to guide the listener's attention. By contrast, mixing in games in many ways needs to become more of a pre-production behaviour – something that is carefully considered before all of the dynamically generated sound effects are going to be flung at the audio engine, to ensure clarity wins out over sonic mush."

Garry Taylor: "Until the ITU-R BS1770 standard was published, it was very difficult to measure perceived loudness. Clever mastering tools with brick wall limiters could easily fool VU and PPM meters. The ITU standard tried to remedy that and gives us something we can work with to measure loudness in games."

Rob Bridgett: "Of course THX and others have made great efforts into getting home theatre and entertainment systems calibrated and as close to how the director intended the film or game to be heard. But in the end, we have no control over what the consumer is listening on at home. It's a crap shoot, but that doesn't mean we shouldn't be making the very best efforts as mixers and content creators to ensure the most consistent quality for the consumer. I've done a lot of research in this area and here at Radical Entertainment, we are mixing at a reference listening level of 79dB. This appears consistent with most other developers who are doing this kind of thing. We also check our competitors' games for loudness and adjust based on any trends we're hearing."

Scott Selfon: "The Interactive Entertainment Sound Developers (IESD) branch of the Game Audio Network Guild (GANG, the professional game audio creators' society) has facilitated a number of conversations around this problem and there's clearly a lot of passion from around the industry to address and solve it. Platform audio owners and game development studios have called out potential areas for enhancement in measurement techniques, as well as getting into debates on what really reflects an appropriate peak or long-term loudness measurement. All in all, there's a great amount of consistency and agreement in principle. I'm optimistic that reference levels are achievable."

Rob Bridgett: "I see the industry loosely adopting and agreeing on standards like the ITU loudness recommendations. Accurate de-bug meters with a wide range of modes, displayed onscreen by the console development tools would be a huge benefit for developers. Any standard will need to change as trends in the industry change, so we have to keep on top of it with a flexible forum and flexible recommendations."

Garry Taylor: "About six months ago we formed the Sony Worldwide Studios Audio Standards Working Group, which includes representatives from Japan, the States and Europe. One of our tasks right now is measuring as many games, films, and trailers as we can get our hands on and later in the year, we'll be making loudness recommendations for all Sony Worldwide Studios' 'first party' titles. The good thing about BS1770 is that it's an average loudness measurement and it gives developers the opportunity to use as little or as much dynamic range as they feel they need for any particular title."

So, much room for encouragement then… and many an audio director around the globe will value the backing and support any kind of established standard will provide him or her when fighting to explain headroom and perceived loudness to a non-audio savvy game director telling them 'make it louder' after listening to the title only for short periods on atypical set-ups.

There's the definite sense of a will to work together wherever possible ultimately to achieve a videogame standard for perceived loudness and provide whatever metering/measurement game development tools are required. Such guidelines look most likely to be voluntary but are likely to be widely accepted and enthusiastically adopted throughout the game audio fraternity. Perhaps in the course of time, there will be greater parity across entertainment formats, too. Better keep the remote to hand for now though.

Taking The Middle Ground

Firelight Technologies' Brett Paterson talks about the new look FMOD Studio.

FMOD interactive audio middleware has been making game audio easier and more creative for some time now. Recent projects to benefit include *Little Big Planet 2, Deus Ex: Human Revolution, World Of Warcraft: Cataclysm, Alan Wake, IRacing*, and more. And just like the developers it serves, Firelight Technologies is not standing still...

"It's about putting power into the hands of game sound designers instead of just coders," says Brett Paterson of Firelight Technologies. He is speaking about FMOD Studio, the latest version of Firelight's highly regarded game audio design tool, previously known as FMOD Designer.

For the first time FMOD now has a mixing panel, looking much like any DAW. But rather than control the levels on a linear mix it's used to run, adjust, and alter the audio in a game – in realtime.

"We're trying to take a more pro-audio approach," Paterson continues. "Instead of having something that looks like a spreadsheet, we want something that's recognisable to any audio person."

> "We're trying to take a more pro-audio approach," Paterson continues. "Instead of having something that looks like a spreadsheet, we want something that's recognisable to any audio person."

He took *Audio Media* on a quick tour of the new software. "There's a fully interactive mixer with a channel strip interface; there are faders, buses, returns, and sends; and there's also a new section with an effects deck. You can apply effects to any bus."

He's not wrong about it looking more 'human', in fact you could be looking at a new bit of studio mixing software. So far, so DAW. How does the interactivity work?

"You create 'Snapshots' of the mixer settings and these are triggered by in-game actions. For example, you could dip the effects when a character speaks. Or you could trigger effects, like a low pass filter, when someone is hit by a bullet." (to create the *Saving Private Ryan*-type effect).

"You can blend between these different snapshots to cover all the different variables within gameplay and can alter the settings while the game is being run. You can even change samples on the fly. There's no more stopping the game to rebuild with the new material or new settings. It's all tweakable in real time."

Another new feature in FMOD Studio is the level monitoring. A lot of the time in game development there's no real way of judging the final output levels – except for some educated guesswork and a sprinkle of intuition. But Studio has full output metering.

And there's more... A familiar logo at the bottom of the main FMOD panel gives you a clue to even more pro audio credentials – Izotope. Firelight has formed a partnership with the US-based plug-in developers and is building Izotope effects into Studio.

"We're doing it in stages," explains Paterson. "The aim is to roll out more and more, but we've started with the two most popular: the iZotope Compressor and the Trash tool. These are both incredibly useful in game-audio design and fit well into Studio. It's a good partnership and when we showed how it all works at GDC this year, we got a great response from customers." AM

CRYSIS MANAGEMENT

Crytek's Florian Fusslin speaks with *Audio Media* about FMOD, in game.

Among the many leading developers to have used FMOD to help create truly immersive audio are Crytek, the team behind games including *Far Cry* and *Crysis*. Crytek is based in Frankfurt but has offices in Nottingham (UK), Budapest, Kiev, and Seoul. We spoke to Crytek's Florian Fusslin about this team's use of FMOD in the past and present:

AM: What titles have you used FMOD on?

FF: We first used FMOD on Crysis back in 2005 and have been working with it ever since.

AM: How have you used it?

FF: We're using FMOD API and FMOD Designer for everything from sound effects to in-game dialogue and music.

AM: How powerful a tool is it, compared to bespoke tools made in-house?

FF: The amount of freedom it offers for sound designers to control, implement, maintain, and mix pretty much all aspects of audio for a game makes it extremely powerful. We would not achieve a better result with an in house solution – at least not without assigning a lot of resources to it.

AM: Have you used the latest version with the mixer interface and what are your thoughts on it?

FF: We shipped Crysis 2 with Version 4.33.07. The FMOD mixer interface enabled us to achieve a high quality mix and a fast turnaround, and especially during the final studio mix. The concept of an intuitive user interface fitting sound designers' expectations and requirements hit the spot.

AM: Is it easy to have lots of people contributing to a project, all using FMOD?

FF: Due to the modular structure of our FMOD projects it is no problem to have several sound designers working simultaneously on different aspects of the game at the same time. Their work then comes together in the overall project.

Focusrite Control 2802

High class analogue channels plus DAW control... the 2802 has a lot to say for itself. STEPHEN BENNETT reports.

In early 2011, Focusrite and Audient announced that the former would commence the production and sale of some of the latter's products. The Control 2802 is part of the fruits of this agreement, is now wholly a Focusrite product. It features 'dual layer' technology, allowing the desk to be used both as a recording console and Digital Audio Workstation (DAW) controller – a requirement that's becoming more and more essential as professionals move to dispense with large format consoles and move to working 'in the box,' while still wishing to maintain the audio quality and routing flexibility they've come to rely on in the analogue world.

Overview

The Control 2802 is, at its heart, an analogue mixer that can also be used as a summing mixer and DAW controller. There are no audio interfaces here – the Ethernet connection is only used to transfer control data to and from the console to the computer. The Control 2802 is narrow but deep (55cm), so you'd need to make sure your desktop could take it – though, it can, of course, be rack mounted or installed much like a conventional console. The slope of the front panel is quite marked – it has to be to incorporate the plethora of balanced inputs and outputs on its rear panel. There are eight mic/line input channels with XLR sockets for microphone input and quarter-inch TRS sockets for line inputs and channel insert send and return. Under the channel strip inputs are three female DB25 sockets for connecting eight summing/input channels, eight DAW inputs, and eight direct recording outputs. To the left of the rear panel are the Ethernet port for communication with the computer, main and alternative monitoring outputs, two channels each of inputs for DAW mix, DAW foldback, and an extra external input – all on female XLRs. Under these are Aux, Cue, and Mix outputs on male XLRs, while quarter-inch TRS sockets provide two stereo effect returns inputs and outputs for the compressor, as well as separate left and right mix insert send and returns. There's a headphone socket on the rear along with an external talkback mix socket with its own phantom power. Personally, I'd have preferred a headphone socket on the top or front panel, where there's already an 'iJack' 3.5 mm socket for connecting domestic MP3 players.

The front panel of the Control 2802 is finished in a non-reflective black and silver, and the different sections are nicely spaced out with plenty of room between controls – which feel sturdy and smooth to the touch. At the top and left are the channel strips with eight motorised ALPS 100mm faders, right top is the monitoring section and buss compressor, while the DAW controls are tucked down on the right. It's a nice package, with most functions, parameters, and settings displayed using OLEDS set in the panel or via illuminated buttons – though I did find it hard to tell at a glance the status of some of the smaller, non-illuminated buttons. The faders have the light feel of those that are typically used in DAW control surfaces, but still precise and robust in use. My only gripe is that there's no armrest as the desk is big enough to lean on. The lack of scribble strips may or may not be an issue depending on how you work. Each of the channel strips feature a peak reading LED bargraph meter (which can be can be switched between channel input, channel output, or DAW channel), phantom power, pad, and phase controls. A Mic/Line button selects the input source, alongside a knob that'll adjust the mic input levels from +6 to 60dB.

The Direct Output Routing section is the first thing that hints that this desk is more than a simple eight-channel mixer. You can set the direct outputs to pre and post VCA fader and Mute or, alternatively, send a signal pre fader for control room monitoring duties. The CH mode bypasses the channel trim gain stage to enable you to send the signal direct from, say, an external microphone preamplifier to your DAW via the Control 2802 so it can be incorporated into the monitoring set-up. There's a second gain control on the Mic/Line or DAW input select section and a button that determines whether the channel insert is active or not alongside a separate Pan knob for the cue mixes – which can be set to post or pre fader. The Cue level control in conjunction with the Alt i/p button allow you to use the summing inputs to effectively add eight separate inputs to the desk, each with their own pan and level controls – so the Control 2802 can work in a kind of 'pseudo' in-line fashion, similar to the 'small fader/big fader' workflow many will be familiar with. Two Auxiliary sends are available, with their pre and post settings located in the master section.

The 'Sel' button's function is determined by the Select mode in the master section. With a DAW, you can set the button to Group DAW tracks, Record enable, select channels, and set automation modes, while in the analogue domain, you can set Solo in place safe, Automation safe (which stops incoming automation data from the DAW affecting controlling the fader,) while the Unity setting sets the channel fader to odB – handy if you're using the console just for summing duties. 'Cut' mutes channels and can be automated from the DAW, while the Solo button can be set to after or pre fade or 'Solo In Place' – which works in conjunction with the 'Sel' setting from the Master section. A neat Solo level knob enables you to make sure there are no gross ▸

THE REVIEWER

STEPHEN BENNETT has been involved in music production for over 25 years. Now based in Norwich he splits his time between writing books and articles on music technology, running his own Chaos studios and working in the Electroacoustic Studios in the School of Music at the University of East Anglia. He's also a filmmaker with several music videos and short films to his credit. www.stephenjamesbennett.co.uk

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level differences between solo and full mix settings, while the 'Solo In Front' setting leaves a muted version of the main mix blended in to the solo'd audio – I found this really useful as it helped me avoid spending too much time over-analysing sounds in isolation.

The summing inputs are configured as four stereo inputs feeding the mix bus and are controlled, along with the two stereo FX returns via a set of controls at the top right of the console. Apart from input balance Level and Pan knobs, these returns can be assigned to either mix or cue busses or summed to mono. Of course, any of these 12 inputs can be used as summing inputs, effects returns, or line level instrument inputs. It's a really flexible system that makes the most of the small format of the console.

Monitoring

The Control 2802's monitoring section is particularly well specified, allowing you to switch, via the MIX/SRC button to either the main mix bus or one of the various other audio sources – DAW mix, DAW foldback, External stereo input, Auxes, and the iJack input. There's a button that flips the Polarity of the left channel of the mix, which, in conjunction with the Mono sum and Cut L and Cut R buttons, are extremely useful for checking for phase and mono compatibility issues. There's a 'Dim' button with an associated level control, a main monitor mute button, and an Alt monitor level that sends an independent mix output to the rear panel output sockets for connection to an extra speaker system. The headphone level control has two associated buttons to select either the mix or cue settings, and I can confirm that the phones output is of a high quality, driving a range of headphones to ear-destroying levels. I found the built in electret microphone fine for talkback duties, and it feeds the Cue outputs via an associated level knob and momentary switch.

Master Section

Two large 20 segment LED meters display either the overall mix or cue levels and, usefully, they have physical trim controls for calibration. The main mix bus features an insert point for patching in external hardware, the Sum setting being used to combine the 'untreated' main mix with the inserted audio for parallel processing. Because of the console's flexible routing system, these inserts, along with the DAW mix inputs, can be used as extra four inputs on mixdown. This ups the analogue input count to 32 – the other 28 coming from eight channel inputs, eight summing inputs, eight DAW inputs, four FX return (two stereo returns), two DAW mix return (stereo input), and two mix insert sum (stereo insert). To make the most of all these routing possibilities, you really need a patchbay – I spent way too much time around the back of the unit! A non-motorised, passive 100m fader completes the master section.

> "Sonically, it's a high quality unit that's pretty transparent in use – though I did manage to get it pumping nicely with judicious use of the attack and release controls."

Compress Me

The on board compressor is an analogue, VCA-based type which, though perfect for main mix processing duties, can be patched anywhere via the in and out jacks on the rear panel. It's a soft-knee design, with a blend control that makes it easy to set up parallel compression. It sits after the Mix insert – if you want to add an EQ on your mix bus and would prefer the compressor before that in the chain, you'll have to patch it manually. It has all the controls you'd expect on an analogue compressor; a gain reduction meter, Threshold, Compression ratio, Attack, Release, and gain makeup. Obviously this isn't a preset device – a good thing in my book – but the excellent manual does suggest various settings to get you started. Sonically, it's a high quality unit that's pretty transparent in use – though I did manage to get it pumping nicely with judicious use of the attack and release controls. I usually mix through an API 2500 and I'd be happy to do the same using this one.

DAW Control, But Not As You Know It.

To enable the Control 2802 communicate with a computer, a CAT5 cable is used to transmit asynchronous data over a local ad hoc network. The manual does a splendid job of leading you through the set-up for both Mac and Windows and I had the console and my MacBook Pro communicating in no time at all – there's also information on how to get things running if you are using a router. The only thing that foxed me was that you have to run a small supplied program before you can communicate with the DAW of your choice. The console uses the HUI protocol and, as I write, it supports Pro Tools 9, Logic Pro 9, Cubase 6, and Nuendo 5. Again, the manual is pretty clear about assigning the DAW you'll be using on the console (two button presses and a knob turn and you're done) and getting communication going between it and your DAW. The DAW layer button switches the console into controller mode – hence the 'dual layer' marketing

– though some of the DAW functionality, such as transport, jog wheel, cycle, marker, and navigation is available in the 'analogue' mode as well. DAW-related information, such as automation status, plug in parameters, pan and so on are shown in a small but clear OLED display which is split into four parts, each with associated clickable soft potentiometer. It's a fully featured controller and, once I'd gotten used to the layout and how to access the various features of my DAW, fairly intuitive in use.

There are four useful function keys that output fixed key commands – I hope Focusrite will make these programmable in future software updates. I normally use a Mackie control with Pro Tools and Logic Pro, and I found the Control 2802 speeded up my workflow in the same fashion once I got my head around it.

DAW automation of the Control 2802 analogue faders is achieved by setting up the unit to send and receive automation data, and then creating eight 'dummy' MIDI tracks to record and play back the automation. The Control 2802 appears effectively as two controllers, one for automation, one for DAW control.

Conclusion

The analogue side of the Control 2802 is everything you've come to expect from such pedigree sources. Preamplifiers provide bags of gain, are transparent and 'weighty' (in the same way that API and SSL preamps are), and the controls are clear and positive in action. The whole package feels solid and wouldn't be out of place in any professional environment – the whole signal path is just lovely with an audio bandwidth up to 120kHz. The monitoring and cue sections are comprehensive and should provide most of the features needed for tracking in a small/project studio situation. As a summing mixer, or host for your favourite outboard preamps, it should provide anyone nervous of working 'in the box' with the sonic qualities they are used to from large format consoles. The DAW controller side isn't quite as intuitive in use as some dedicated controllers, but it still provides a comprehensive tactile experience that makes it a worthwhile part of the console's feature set, especially when mixing – and to help that along, Focusrite supplies its DAW-based Midnight and Forte plug-in suites for free as a bonus.

INFORMATION

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PlayNetwork

Making A Sound Success

DAVID MACKENZIE learns how the changes in the retail sector have affected the ways in which marketing has been managed, and the types of solutions that have proved a success for marketing company PlayNetwork.

PlayNetwork is a marketing company that uses creative audio and visual experiences to enhance brands. The company has developed campaigns for brands such as Under Armour, Scheels, and MAC Cosmetics. What makes PlayNetwork unusual is that it offers an end to end service for its customers, from design to implementation and execution. In doing so, it aims to ensure that the brand being promoted has a consistent message across its entire estate.

I spoke with PlayNetwork's Managing Director EMEA, Dharmendra Patel to find out what other companies can learn from its approach. "When a brand comes to us, they come for ideas and solutions around enhancing the brand itself," he explained. "We deal with marketing strategy, understanding their objectives, understanding what their customer profile is, and where they're trying to get to as a brand. Essentially, we provide them with an end to end service, providing them with retail theatre type solutions."

Dharmendra Patel.

To provide this service, PlayNetwork employs an in-house team of fifteen producers in America and Europe and a technical team that designs solutions for in-store music and video installation. There are also teams dedicated to mobile communication and social media networks. As Dharmendra commented, "It's important that we have distribution channels across all platforms for our content. Music reaches all platforms."

Design Led

A key approach taken by PlayNetwork is to design sound profiles for use by retailers in-store that match the customer profile for the time of day or the product range being pushed at that time. To achieve this, the company developed a proprietary hard disk player. The CM500 can be installed in store and gives the retailer the option of running multiple zones within their building, or to vary the sound based on their customer profile for that time of the day.

When designing soundtracks for brands, it is important to reinforce the key marketing messages surrounding the product. PlayNetwork handles promotional audio for MAC cosmetics. Recently, a soundtrack was designed around the makeup company's 'Wonder Woman' brand, a range of products represented by powerful, glamorous women. To enforce the brand's connotations of powerful, glamorous women, PlayNetwork designed upbeat tracks with powerful female vocals. These tracks can then be played in-store when the Wonder Woman brand is being pushed.

To help MAC retailers enforce key marketing messages in this way, PlayNetwork developed the CM500, a hard disk player that is installed in every MAC store across Europe. Matt Stockton, PlayNetwork's Head of Creative Services EMEA explained that each month, every store is sent an update disc with new tracks and playlists. When the updates have been loaded, the store can choose from nine channels, allowing them to promote different product ranges throughout the day, or in separate zones in the store. "There are currently six core music channels that the store can access via the front screen of the player," explained Matt. "Channel 7 is the current "Colour Story". Colour Stories are the channels that are created to reflect each seasonal collection and expire as the collection goes off counter." ▸

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The Right Sounds

The CM500 is not the only example of proprietary technology developed by PlayNetwork. A database was also developed for use in the company's Seattle studio that allows it to profile music more effectively by removing offensive lyrics from certain tracks, making them more suitable for varying markets. "For example in America you couldn't play Jessie J because there are quite a few swear words in her music," explained Dharmendra. "Whereas some of the European retailers will be quite happy to play that. You've got to ensure that all the music on the database is adjusted for local markets. We spend a lot of time on each track ensuring that we understand that track's properties, not just in terms of the music, but in terms of the lyrics and in terms of the language used. That requires our proprietary database, which allows us to then profile the music more effectively."

For Managing Director Dharmendra Patel, PlayNetwork's ability to provide the technology to back up its initial concepts is what sets it apart from the competition. "Retailing has changed in the last ten years," he explained. "Retailers have to be more dynamic, they have to be creative. Traditional music suppliers can only provide music. You really need to be thinking outside the box now when you're approaching retailers and offering end to end solutions. That's one of the key advantages that we have, the retailer doesn't have to go to different suppliers to get his store environment to the level he wants. Because we're then able to provide the technology platform in store it's all within one platform as opposed to having several platforms running in store. So from a customer point of view, it allows a brand to have more consistency across their entire estate. Branding has become a lot more relevant, and will become more relevant in the next five years. It's important that you have a consistent approach wherever your sights are."

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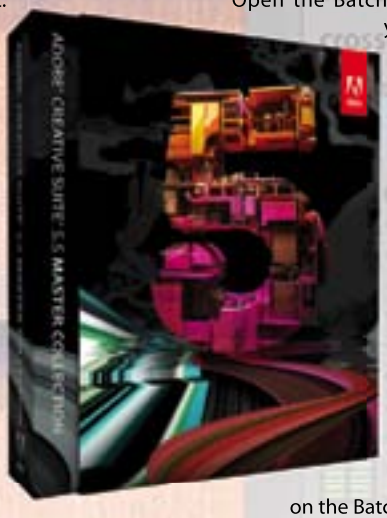
Adobe Audition 5.5

It's faster, brighter, sharper, more stable and packing a great deal in – but will JERRY IBBOTSON still be in love when the honeymoon is over?

As a regular reviewer for *Audio Media* there are some times when I beg the editor to let me test something because I'm just very curious about how it works. In this case I've been cap-in-hand to the big boss for precisely the opposite reason: I've been using Adobe Audition since 1998, when it was called Cool Edit Pro and made by a firm in Arizona called Syntrillium (acquired by Adobe in 2004). Every version that's come along since has been at the core of my studio, so I was pretty keen to get my hands on the latest update, Audition CS5.5.

I've got to come clean right at the start and say I've always been a little bit in love with this often ignored and definitely misunderstood bit of software. It's used in radio stations the world over and has a small army of fans, even if they don't always admit to it. I've looked on the websites of successful audio companies who happily boast of using Pro Tools or Nuendo but then, amongst their gallery of studio shots, I spy Audition up on a computer screen in the heart of the action.

I love it. There, I've said it again... But love can be both bitter *and* sweet...



Quicker, Brighter, Clearer

First things first: Audition is now on the Mac. What has always been a PC-only product is now cross-platform, thanks to this 'update' being a complete rewrite from the ground up. If you've never paid it much attention before for that reason, then Adobe clearly wants you to consider it a viable option in the world of DAWs.

I've been testing the PC version, running on a fairly old machine with XP as well as a new laptop with Windows 7. Even on the older PC it runs more quickly and more securely than its predecessor, Audition 3.0. From starting up to processing effects, Audition CS 5.5 is a far nimbler beast, due to the very core of the software being entirely new.

Something else you notice when it first runs is how nice it sounds. The playback engine is also brand new and things do sound brighter and clearer. There's also a new 'look' to it, which brings it into line with other Adobe products like Premiere and After Effects. I'd say it looks more professional.

The View From The Heart

At the heart of Audition have always been its two key views: Edit and Multitrack. Edit makes permanent changes to a sample or clip while Multitrack is where you mix. Obvious, I know, but the Edit view alone is very powerful and I've heard of some people using Audition just for this and never straying into the Multitrack at all.

Let's look at that Edit view first. This lets you do pin-sharp editing, right down to sample level. But at the same time the waveform is displayed in a very clear, simple way. Editing like this in Audition has always been a delight and not much has changed in that regard. Even anomalies like excess bass from mic or line rumble can be spotted as jagged sections within the waveform, such is the clarity of the display. Carried over from version 3.0 are drag envelopes at either end of the wave, to draw in permanent fades that you can change in shape. There is also a floating amplitude 'knob' to make instant adjustments to either the level of the whole clip or a selected portion.

Edit View is where functions like Batch Processing and Sample Conversion take place. To be blunt, batching in version 3.0 was a bit of a mess, with 'scripts' having to be recorded. I often found that these didn't then work how they should. In CS 5.5 it's been made so easy that's it now a joy to use.

Open the Batch Process box, drag in the files you need to process and hit the button. The view changes to show you a drop-down of what effects or actions you can apply, plus selections for changing sample rate, bit rate, channels, and file format (WAV, MP3, etc). There are a number of useful preset batch effects, such as amplifying by set amounts or 'Telephone Voice' filtering, but to add one of your own is a doddle.

One way is to use Record Favourite: carry out the function or effect on one sample, name it (e.g., 'Editor's Office Reverb') and it'll appear on the Batch Process preset list. Even easier is to use the 'Save... as Favourite' button that appears on many of Audition CS5.5's effects. Click the little star icon and that effect setting is saved to the preset drop-down.

If you want to drag in 300 48K 24-bit files, filter them and export as 44k 16-bit MP3s, it's supremely easy. And fast. There's no more waiting ages for each one to be processed, they now fly through the system. There are little touches too, that make life easier. If some of the samples you are converting are mono and some stereo, you can select 'Same As Source' in the channel box and it won't touch that aspect. It doesn't sound like much but it's something I appreciate, in the red mist of a looming project deadline!

What's New?

Editing multi-channel WAVs is new in CS5.5. I used it recently after a footstep recording session. I'd used an Edirol R4-Pro and four different mics – a matched stereo pair and two monos – to provide different perspectives. The resulting single four-channel WAV was then dropped into Audition CS5.5 and I was able to apply some basic tweaks across all the legs, saving these back into the combined four-channel file.

This brings us onto Markers, another very useful part of Audition. Rather than cutting out each footstep by hand (there were hundreds in total) I used the Marker function ▸

THE REVIEWER

JERRY IBBOTSON runs Media Mill, a York-based audio production company started in 2000 that specialises in sound for video games. Prior to this, Jerry was a BBC journalist for ten years, ending his spell with the Beeb as a reporter and newsreader at Radio One Newsbeat.

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to quickly highlight each footfall, again across all four legs of the recording at the same time. These marked sections were then exported as hundreds of separate WAVs, some stereo and some mono, using a naming convention of my choice. If I later decide I need to change the resulting footstep samples I can go back into the original four-channel WAV, make alterations across the whole thing, and re-export my marked up sections.

Spectral View Editing was something that came in a few years ago but now you can view your clip as a waveform and spectrally at the same time. If you've got something that shouldn't be there, a tweeting bird for example, it should show up in the Spectral Display. Using a range of different tools, you can simply select it and remove it. It's like editing an image in Photoshop. Audition will also do this automatically for you, using the Healing Tool (what did I say about Photoshop?). Being able to see the waveform at same time makes analysis of a sound file even easier.

SOMETHING OLD, SOMETHING NEW...

Among the existing features of Audition that have had a total re-write is the Noise Reduction effect. This has always been something that has impressed me as a long term user; the powerful way in which it can remove select background audio from a file. The process is simple: select some of your noise (either in Waveform or Spectral view) and Capture it as your Noise Profile. Then use this profile to reduce the noise across the whole of the sample or file you're working on.

The algorithm behind it has been completely redesigned and I've just had the opportunity to use it for the first time. I've been working on some sound effects sample for a new game and needed some specific sounding metal impacts. I had the material I needed: a recording I'd made a few years ago at a blacksmith's forge of a heavy hammer on an anvil. It's a lovely sound but spoiled by the noise from the furnace in the background.

At first I switched to Spectral View and selected a section of the file between hammer hits, highlighting just the lower frequencies. This became my Noise. Opening the NR effect, the panel that pops up looks all new and shiny and has options including allowing you to reduce or increase the amount of reduction across the frequency spectrum, as well as how much reduction to use overall. I did nothing but the Apply button.

As quickly as Audition now applies all its effects, the job was done. But I'd misjudged where the actual noise was; there were some higher frequencies sound still hanging around. So I hit Undo (now much better implemented, with a proper History panel to look at) and selected the whole of the frequency range of my noise section. This time the results were astonishing. The file was now completely devoid of the furnace sound, which had been pretty close to white noise. In the past I've had to play with various sliders to avoid the dreading artefacting, the distinctive Dr-Who-type-warbling that can be left behind. But there was no need for that. Whether for creative or forensic uses, I think that it's raised the bar.

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Multi-Track Mixing

Time to take a look at the Multi-track, which you get to by hitting F12. This is where, over the years, I've mixed everything from radio features to film soundtracks. In CS5.5 it finally has proper 5.1 mixing built in, rather than bolted on the side as an encoder. It's good to see that there's also a wide range of fold-down options available through the Channel Mixer function. I've not had the chance to do any serious surround mixing since getting hold of Audition CS5.5 but it's an obvious improvement and long overdue.

Generally the Multi-track now works more quickly and is more stable than before. 3.0 seemed very buggy in my experience, but CS5.5 runs like clockwork. Plug-ins are quicker to load and process, and Audition will automatically convert and conform files to the session format.

It's worth pointing out that the code for Sample Rate conversion in Audition has been completely re-written. It was already very, very good but now it's claimed to be even better. I can say from past experience that when I've had to downsample audio files the conversion algorithm has always been so good that it's often been hard to tell the difference – even going from 48k to 22k.

Some of the ways in which the Multi-track works are new: the way you modify volume envelopes has altered slightly and there is now a dedicated Slip Edit Tool, letting you shift the contents of a trimmed clip left or right. This was done with the ALT key before. Also, your Save History (showing where previous sessions and files were saved) is now stored within Audition itself, rather than in your browser. This is possibly down to the shift to include Mac OS.

It's handy to know you have OMF Export options for a mixing session, making inter-operability with other DAWs a strong proposition. And you can now have multiple sessions open at once, which I have already found invaluable.

Overall, it's all a definite improvement. Faster, stronger, more stable, more flexible, and even better looking.

But...

And it's a 'but' of pretty serious proportions. There's an awful lot that's been removed. There were key things in the review version CS5.5 that had not been carried over from 3.0, like being able to preview-play files before you open them. Grouping clips together so they move as one up and down the timeline. The entire CD creation feature – one of the best I've ever seen and used. Hardware control. Previewing an edit.

These missing pieces may be put back in in subsequent versions, but for now, who doesn't want to preview a clip, just to check it's the right one? And Grouping? If you need to shorten or lengthen a mix, you now can't lock your elements together before you drag them left or right. This has already caused me a major headache on a project for my biggest customer. As for leaving out the CD creation functionality and edit-previewing; don't get me started.

As I said at the start, I love Audition and am normally happy to evangelise about it, but I've been stunned at how some core functionality has be left behind in the move to CS5.5. On the Adobe forums the company has responded by saying that in the short time frame (two years) that it's taken to rewrite the software from the ground up, they didn't have the time to implement everything. That isn't good enough. Some of this, like file previewing, is crucial. And as someone who works in software development, I know that the end users don't care how hard the coders and designers have worked or what obstacles they've faced. What matters to them is their own experience of it.

Conclusion

Now I have to sum up. I'm still furious at what's not in Audition CS5.5 but thankfully it will run alongside 3.0 on the same machine, so I can keep dipping back into the older version until the missing features come along. Is that progress?

But that doesn't stop Audition CS5.5 from being an excellent bit of software, and what is in there (there's an awful lot) is superb. It's always had an intuitive feel to it that hasn't been lost this time round. A friend of mine was 'showing me round' the latest release of a certain top-end DAW, costing an awful lot more, and all I could think was, "Audition does that… Audition does that too…"

I admit I'm biased, having earned a living off it for years, but maybe now is a time to download the free trial and see for yourself if I'm just a love struck (if slightly broken hearted) fool… AM

INFORMATION

£ **Adobe Audition: GB£278.00 (exc. VAT)**
Master Collection CS5.5: £2,303.00 (exc.VAT)
Ⓐ **Adobe**
Ⓦ **www.adobe.com/uk**

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PRODUCT SAMPLER

DAW Update

Whether you're in music, film, TV, radio, games or any other media, several of the DAWs below will be in competition for your business. You might be looking for a streamlined workflow, efficient ingest and fast editing, or a colossal stack of processing tools, but to make an informed decision you'll need to be up to date with the latest developments. This Product Sampler will fill you in on some of the more recent additions to these popular DAWs.

Ableton Live has a wealth of real-time editing and performance features that make it a powerful tool for studio and stage. Ableton Live 8 includes a wealth of new techniques and improvements such as a new groove engine, revamped warping, live looping, new effects, crossfades in the Arrangement View, and a reworked MIDI editor.

www.ableton.com

Apple Logic Studio is a powerful collection of tools, presented in a way that is approachable for musicians.
In addition to a vast array of instruments, effects and loops, Logic Pro 9 provides a range of templates to get your project moving. There are templates for instrument effects and processing, as well as genre-relevant instrumentation, all set up and ready to go.

www.apple.com

Image Line's FL Studio 10 is a complete music production environment. Its editing capabilities include pitch correction, harmonization, and time-stretching. It can be hosted in other DAWs as a VST or connected through ReWire.
Studio 10 can also be used to apply realtime effects such as delay, reverb, and filtering.

www.image-line.com

Pro Tools 9 represents a major shift for **Avid**'s industry standard DAW. Before, users had to use Avid hardware with Pro Tools. Now, Pro Tools 9 can be used with an Avid audio interface, a third-party interface, or standalone with a computer.
The new Pro Tools Mbox family is a range of personal recording systems with drivers to accommodate a range of workstations.

www.avid.com

SONAR X1 Producer is the flagship version of **Cakewalk**'s latest DAW. Unlike the INTRO and STUDIO versions, Producer's mixing console benefits from the ProChannel, expanding the existing console with pro-studio sound built in to every channel.
The ProChannel comes with Gloss EQ, an integrated channel and bus compressor, and tube saturation and routing.

www.cakewalk.com

Mackie's Tracktion 3 condenses inputs, audio clips and effects into a single screen interface.
Its High-Definition 64-bit Math mixing option improves headroom and eliminates distortion through the summing bus.
Tracktion 3 comes ready for 192kHz-compatible audio interfaces. It also features a Safe Record mode that ensures the recording won't be stopped accidentally.

www.mackie.com

Adobe Audition handles audio recording, mixing and restoration. Audition CS5.5 benefits from a new high-performance audio engine and the ability to edit multi-channel files and mix projects in 5.1 surround.
Workflow with Adobe Premier Pro has also been enhanced with the addition of roundtrip editing.

www.adobe.com

Mixbus 2.0 is a full-featured DAW produced by **Harrison Consoles**. Its knob-per-function interface is designed to replicate the workflow of an analogue recording studio. The recent upgrade to 2.0 doubled the number of mixbuses to eight, providing enough sends for groups and effects returns. Plug-in controls can also now be mapped to controls on the mixer strip.

www.harrisonconsoles.com

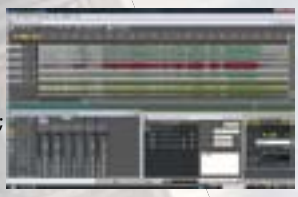
Samplitude Pro is a purely native DAW from **Magix**. Version 11 brings with it the EQ116, a new six-band equaliser that works with oversampling or phase-line algorithms.
Also new to the latest version is sMax11, a new limiter/maximiser for mastering. sMax11 is a hard limiter with input amplification.
Samplitude shares several tools with Sequoia.

www.magix.com

Sequoia from **Magix** adapts to suit its application. It has convenient features that streamline workflow for radio productions, multi-track editing, and mastering. It also comes with an audio restoration suite. Version 11 introduces the EuCon high speed Ethernet protocol, enabling control of Sequoia from a range of Euphonix Pro products.

www.magix.com

SADiE 6 is available in four role-specific configurations; Radio Producer, Post Suite, Mastering Suite, and Sound Suite. Sound Suite is a full package containing all SADiE manufactured plug-ins. SADiE 6 offers a choice between proprietary audio I/O and DSP processing, or standard soundcard I/O and DSP functions running on the host computer.



www.sadie.com

Apple's Soundtrack Pro 3 is an advanced audio editing package designed to work alongside Final Cut Pro. It houses powerful tools for surround mixing, audio restoration, and sound effects. Soundtrack Pro scans for common problems like clicks, pops, and hums, with the option of fixing them all automatically.

www.apple.com

Pyramix 7.0 from **Merging Technologies** has been updated with a new interface that is clearer to read and provides faster access to all functions. New automation lines have been added to provide an instant visual reference in the timeline. The timeline also colour-codes individual automated parameters. These additions as well as several more are intended to make the completion of each task faster.

www.merging.com

Soundscape V6 is the latest evolution of **Solid State Logic's** high performance DAW. It specialises in audio-only recording, editing, and mixing. It does not feature MIDI sequencing or virtual instruments, focusing instead on its advanced user environment. V6 can handle up to 128 channels of simultaneous audio, and is optimised for real time performance.

www.solid-state-logic.com

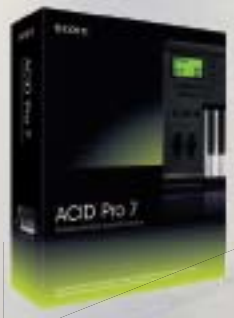
Cubase 6 from **Steinberg** has a new set of drum editing tools to perfect live drum tracks. A new transient detection function merges transients across multiple tracks and divides the drum hits for detailed tweaking. Rhythmic audio material can be quantised like MIDI, making it easier to fix timing issues or change the groove of live-recorded drums.

www.steinberg.net

MOTU's Digital Performer 7 is a DAW with MIDI sequencing. Version 7 brings with it a new suite of classic guitar pedal and amplifier emulations. It also has a physical modelling speaker cabinet emulator with mixable mic positions. Other features include Wave 64 support for files in excess of 4GB, and lead-sheet creation with inline lyrics and chord symbol tools.

www.motu.com

Sony ACID Pro 7 combines multi-track recording and mixing, MIDI sequencing, and ACID loops. It can handle 24-bit, 192kHz recording and mixing. Pro 7 comes bundled with a generous collection of software including ACID Pro Effects Rack, powered by iZotope, Garritan Aria for ACID Pro Player, Sonoma Wire Works KitCore, and Native Instruments Guitar Combos.



www.sonycreativesoftware.com

Steinberg's Nuendo 5 is a native post-production system with features developed for film and TV editors, mixers, and computer game sound designers. It features a new set of plug-ins including Surround Panner V5, an advanced surround panner that can handle rotating rooms and atmospheres according to camera pans.

www.steinberg.net

PreSonus' Studio One has an innovative workspace with intuitive drag and drop controls. The Project page houses a powerful mastering suite that links each song within the project, automatically updating each song within the project. Studio One Pro can import a QuickTime video into a song for playback and sync or extract the audio and place it on a new track.

www.presonus.com

Sony Sound Forge Pro 10 has a range of new features such as musical instrument file editing and processing, precise event-based editing, and pristine audio conversion and time stretching. It has a feature called Threshold Record Triggering that starts recording when a set audio threshold is reached. Pro 10 comes with additional tools for sound design and mastering.

www.sonycreativesoftware.com

Steinberg Wavelab 7 provides tools for mastering, editing, and restoration. Version 7 features an overhauled, customisable approach to workspace management. The new WaveLab Control section groups together a selection of studio-grade analysis tools in a dedicated space. Version 7 comes with a quality collection of VST3 plug-ins.

www.steinberg.net

video guide

A Sound Pro's Guide To Video

Colour Grading: Part 16

In his final look at the advances in the world of colour grading, KEVIN HILTON tracks how software has slowly come to dominate over hardware solutions.

The last 20 years in broadcast technology have seen a gradual shift away from hardware to an almost fully software-oriented way of working. There are obvious exceptions of course – cameras, large-scale vision mixing, film scanning, and mastering – but generally computer programs have been developed for the majority of jobs in broadcasting and post-production.

The speed of change has increased in the past couple of years as well. This has been particularly noticeable in the area of colour correction, a field that was at one time dominated by mechanical-style equipment. As discussed in last month's Video Guide, da Vinci, one of the pioneers of stand-alone grading control systems, has moved from proprietary, rack-mounted processors to a lower cost software-based operating system, with a specially designed control panel for the colourist.

Da Vinci's main rival during the heyday of colour correction hardware, Pandora International, continues with its stand-alone processor approach, although co-founder Steve Brett indicates that the company will eventually move from its 1U rack box to no box at all.

Hardware designed specifically for the business of colour grading performs better than its software counterparts and is able to carry out complicated processes in real-time. This is a significant advantage over desktop systems that have to render the source material before work can begin on it. Although software graders are becoming more powerful with each increase in computer processing power, there is a parallel shift in what colour correction programs can do in terms of complicated masking and manipulation.

Doing Away With Pandora's Box

Pandora's top-end grading system is the Revolution. Launched at IBC 2006, this real-time software-based colour correction system was hailed as doing away with rendering. It was originally developed to use four processors but its next generation is seeing all that processing power moved into one big chip on a PCI card. This makes for a cheaper product, both to produce and for facilities to buy.

Steve Brett says that with the pure software-based approach a CPU (central processing unit) on a computer housing a colour correction program is not usually powerful enough to deliver 2k operation. In such cases a graphic processing unit (GPU) has to be added, which needs a large, substantial graphics card to drive it or an SPGA (staggered pin grid array, see glossary) architecture on the host workstation.

The current version of Revolution is the RevoExpress, a data grader that works at up to 6k using a 1U rack image processor. Supporting the RED Rocket card, with real-time play-out of 4k R3D files, the system can convert the digital camera files into a variety of formats, including ProRes, DNxHD, dpx, and tiff.

The colour corrector is controlled from Evolution panels, which have the tracker balls Pandora introduced early on in the development of its systems as an alternative to the joysticks offered by da Vinci. Features include a scene change detector, FastTrack auto tracking, 1D and 3D LUTs (look-up tables), Bezier Primaries and multiple six vectors, unlimited secondary correction for both foreground and background images, Key and Image defocus and clipping, blanking and legalising functions.

As well as data and file capability, RevoExpress can work with tape-to-tape and film-to-tape production chains by means of a Linear Control Pack. This can operate and synchronise up to four VT machines at the same time and run telecines or video noise reduction units.

Taking The Soft Route

While dedicated processing systems bring the power and handling needed to deal with the big resolutions encountered in colour correction today, the software route has become widely popular and is used by an increasing number of facilities. One reason for this is the range of features offered by modern programs, including masking and motion tracking, in addition to the now expected image isolation and manipulation tools.

> "Hardware designed specifically for the business of colour grading performs better than its software counterparts and is able to carry out complicated processes in real-time."

All this still requires a large amount of processing power, so the majority of software-based systems used by the leading colourists and facilities are now likely to be a hybrid of hardware and computer programs. The new breed, including Quantel's Pablo, Autodesk Lustre, Digital Vision FilmMaster, and FilmLight Baselight (all examined in previous Video Guides) and Assimilate Scratch and SGO Mistika, rely on a combination of workstations driven by several processors and a GPU for extra boost. This kind of system acceleration delivers the power necessary to do the job and match the performance of hardware specific systems like Pandora Revolution.

US company Assimilate is among the leaders in digital intermediate (DI) today but has only been in the market since 2004. As is common, however, its founders were well established in the film and post-production industry. Chairman Jim Meadlock and Chief Executive Jeff Edson both worked for engineering and geospatial software developer Intergraph, but turned their attention to building a complete digital production chain for filmmaking.

To supplement their own experience, Meadlock and Edson bought an existing manufacturer of DI systems, DIP R-evolution, founded by Gerk Huisma and Nacho Mazzini. Both Huisam and Mazzini are both still with Assimilate, as Vice President of Engineering and Vice President of Sales respectively.

Assimilate's intention was to produce cost-effective, open platform DI systems for both post houses and film ▸

GLOSSARY

SPGA

The staggered pin grid array is a method of positioning pins on an integrated circuit board. It is made up of two square arrays of pins, which are offset in both directions by half the minimum distance between pins in one of the arrays. This means that within a diagonal square a lattice is formed within the set area of the assembly. The SPGA is similar to the pin grid array (PGA) in that there is usually an area at the centre of the board where there are no pins at all. The SPGA format is generally used for systems that need a higher pin density than the standard PGA. This includes microprocessors used in high performance applications.

REFERENCES

Steve Brett,
Pandora International
www.pandora-int.com

Colour Grading: Part 16

studios. The company's first product was Scratch, which has been the backbone of its activities ever since. Scratch can be used for producing dailies, conforming, titling, and finishing, as well as colour correction, all within the same workstation.

Scratch is claimed to be the first DI system that was able to work with native RED files. It can run on both Mac and PC, currently OS X and Windows 7. As well as RED RAW Scratch can handle ARRI RAW, Panasonic P2/MXF and AVCHD, Canon 5, Phantom, SI2K, and DLSR (digital single lens reflex) cameras.

"The other end of software-based colour correction, and what the majority of people would think of when considering this subject, is grading programs that can be loaded on to a workstation like any other kind of program…"

Grading tools include non-destructive primary and secondary colour correction in real-time; a 'heads-up' interface, plus support for the Avid Artist Color, Tangent Wave and Tangent CP200 control panels; match and auto grading; 2D and shape tracking; keying using Vector, Chroma or Luminance; finessing keys; integrated Histogram, Waveform, Vectorscope, and Colour Curve views; group shots, copy/paste grades and reference libraries; key frames and animation curves; and import and save 1D and 3D LUTs relating to primary grades.

Not Missing Mistika…

Spanish company SGO has been in the broadcast market since 1993 and is a systems integrator and distributor as well as a manufacturer. It produces products for the news and storage markets in addition to the Mistika 2k HD/SD editing, compositing, and colour correction.

SGO began developing Mistika from a previous product, Jaleo, 15 years ago. It can operate with RED, ARRI, and SI-2K files and, like Assimilate's Scratch and Quantel's iQ range, is now able to handle 3D material. Colour grading for stereoscopic material can be done in real-time and at full resolution up to 2k for each channel. For 2D correction Mistika is able to work at up to 4k in real-time, with full manipulation of 4k DPX files without the need for rendering. Other features include 16-bit per channel floating point processes, support for Linux 32-bit and 64-bit systems, and 3D LUT working.

The other end of software-based colour correction, and what the majority of people would think of when considering this subject, is grading programs that can be loaded on to a workstation like any other kind of program – word processing, spreadsheets – and used with any standard computer.

Synthetic Aperture's Color Finesse is a leading example of this kind of package. Synthetic Aperture is an American company founded in 1995 to develop audio and video applications. Color Finesse is now in its third version and is described as telecine-style colour correction designed to fit a user's way of working, rather than operators fitting in with how the program works.

It can be used as a plug-in for After Effects, Final Cut Pro, Motion, and Premiere Pro, offering both primary and secondary grading and curves, as well as a stand-alone system. In its own right Color Finesse 3 can be used to grade material loaded direct from source or from Final Cut Pro. It can work with QuickTime movies and image formats including JPEG, BMP, TIFF, Targa, Cineon and DPX. Settings for ASC CDL, Photoshop, Discreet, and Quantel files can also be imported and exported.

Perhaps the system that personifies the whole software/desktop approach is Apple Color. This was fully integrated into Final Cut Pro in the X version released this year, so that, like SGO Mistika at the upper end of post systems, it offers all finishing tools – editing, colour correction, and mastering – in a single package.

The grading program started life as FinalTouch, developed by US firm Silicon Color, which launched in 2003. Apple bought Silicon Color in 2006 and integrated FinalTouch into the Final Cut Pro Studio 3 suite, re-naming it Color in the process and launching the newly re-packaged and re-branded software in July 2009.

Final Cut Pro Studio sparked a trend for all-in-one desktop video production systems. Sony responded with the Vegas, while Adobe introduced Premiere Pro. Both feature colour correction tools alongside audio and video editing and finishing tools.

"…desktop systems have given small facilities…the chance to grade a production using tools with similar flexibility and capability to those used by big name colourists."

While initially derided by those working at the higher level of grading and post-production in general, desktop systems have given small facilities, particularly those working on independent films and corporate projects, the chance to grade a production using tools with similar flexibility and capability to those used by big name colourists.

This wraps up our look at the world of telecine, film scanning, and colour grading, an area that through the application of new technologies has moved away from its functional beginnings to become an important creative discipline in its own right.

When Video Guide resumes in the September issue, film mastering will be examined, looking at how a finished production is prepared for cinema release or broadcast.

news

London boutique post-production facility The Look, founded by acclaimed colourist Thomas Urbye, has installed a SGO Mistika 2k system at its Rathbone Street premises. Originally set up as an outlet for Urbye's grading work, the company has broadened into visual effects and online editing.

The Mistika has been installed as part of The Look's move into stereoscopic 3D working. The system will also be used for the facility's general 2D digital intermediate production chain, connecting to the facility's post suites, including a cinema grading room featuring HD projection and a 4.4m wide screen.

Thomas Urbye, Managing Director and Senior Colourist at the company, comments, "We've been investigating the emerging stereo 3D market both in the UK and worldwide for the last six months. It appears that it is growing month on month with quality content now being sought and as such, now seems the perfect time for The Look to make the step in to 3D. It is very important to us that we can rely on a manufacturer who is focused on stereo 3D and has a proven track record of delivering the best 3D toolset, as well as a manufacturer who is working hard to build relationships with production companies, directors and producers. It is the passion, the keenness to listen, and the hard working mentality at SGO which has delivered their industry-leading 3D grading and finishing systems to the marketplace and I am delighted to start my relationship with the company by purchasing their Mistika system for my facility."

The Look works on commercials, music videos and TV dramas. Among recent productions are South Riding for the BBC Criminal Justice 2.

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Lawrence of Arabia

KEVIN HILTON finds out how Director David Lean's understanding of the use of sound in creating atmosphere helped his 1962 epic to Oscar success.

LAWRENCE OF ARABIA is an epic film but still has the personal, intimate sensibility that originally established Director David Lean's reputation. The music and use of sound is on a grand scale but it also underpins the quieter, smaller moments that complete this cinematic portrait of that complicated and controversial figure, TE Lawrence.

The film was released in 1962 to great acclaim and commercial success, winning Academy Awards for Best Picture and Best Director, among others. It confirmed Lean's new status as a maker of big, ambitious features. But even in his previous, more intimate work he was always aware of the part that both music and sounds could play in creating atmosphere and tension, as well as underpinning character and action.

Lawrence of Arabia marks Lean's first collaboration with French composer Maurice Jarre, who went on to score the Director's *Ryan's Daughter* (1970), *Dr Zhivago* (1965), and *A Passage to India* (1984), winning Oscars for the last two, which joined the one he had won for *Lawrence of Arabia*.

Jarre succeeded British composer Malcolm Arnold, who wrote the stirring theme and score for Lean's *The Bridge on the River Kwai* (1957) in ten days. Jarre followed the template set by Arnold – creating a sweeping, romantic signature tune that still conjures up images of the desert landscapes so evocatively captured in Young's photography – but also used his music to create atmosphere and character.

Known for his use of stringed instruments, and the guitar in particular, Jarre also incorporated early electronic instrumentation into the score for Lawrence. Jarre had an Ondes Martenot brought over from France to London for the recording sessions, which were held on a film studio sound stage rather than in a recording studio.

The Ondes Martenot was invented in 1928 by Frenchman Maurice Martenot and works using supersonic sound-wave frequencies manipulated by a keyboard with a wire stretched along it.

Jarre used the Ondes to convey both the stark beauty and the eeriness of the desert. This blended with natural sounds, which were built up by Sound Editor Winston Ryder to create another of his characteristically multi-layered audio productions. Ryder was another regular Lean collaborator, first working with him in a sound capacity on 1946's *Great Expectations*.

The opening of *Great Expectations* is remembered for its use of wind, bird calls, and creaking branches to evoke the wildness and desolation of the Kentish marshes, leading up to the dramatic first meeting of Pip and the convict Magwitch. This montage style featured in all Lean's films after that and was probably part of the reason why *Lawrence of Arabia* received the Best Sound Oscar, although the Award named Re-Recordist John Cox, who mixed the film at Shepperton Studios. Ryder later won a BAFTA in his own right for Kubrick's *2001: A Space Odyssey* (1968) and received a BAFTA nomination for Lean's *Ryan's Daughter*.

On its original release *Lawrence of Arabia* ran 222 minutes, plus play-out music. But in those days cinema managers tried to put a film on two or three times a day, usually with a supporting feature. So in 1963 Producer Sam Spiegel, without consulting Lean, had the film cut by 20 minutes. In 1970 a further 15 minutes were spliced out, reducing it to a disjointed 187 minutes.

In 1986 film archivist and producer Robert A. Harris began a long and complicated restoration process that involved a great deal of detective work to find the missing sections.

Eventually Harris and Co-Producer Jim Painten pieced together something approaching the original cut. Unfortunately, sound effects, dialogue, and music were missing from eight minutes of footage. Harris had been put in touch with Lean, who had asked, "What do you intend to do if you can put the picture together but can't find the tracks?"

Harris replied that he would use audio from alternative takes, which is where much of the material came from in the end, as well as black and white duplicates. Sound Editor Richard Anderson used effects from other parts of the film, while Foley was recorded by Harris and Dialogue Editor Jim Christopher at Goldwyn Sound in Hollywood. Stereo mixes were created by Re-Recording Engineer Gregg Landaker, who had to clean up hissy optical tracks.

If all else failed, Harris had told Lean, he would re-record any missing dialogue. When this became necessary Lean contacted many of the stars of the film to re-record their parts. Among these were Anthony Quinn (who played Auda Abu Tayi) and Arthur Kennedy (American journalist Jackson Bentley).

Jack Hawkins, who portrayed Lawrence's commanding officer, General Allenby, died in 1973 but this was not an insurmountable problem. Hawkins had lost his voice in 1966 due to throat cancer but continued to appear on screen. His lines in many films were voiced by Charles Gray, who precisely mimicked Hawkins' style and delivery and so was contacted to record the missing sections.

There was an even more significant reunion at Mayflower audio studios in London, where Peter O'Toole, as Lawrence, and Alec Guinness (Prince Feisal) re-recorded lines under the direction of David Lean. The session was engineered by Mayflower Managing Director Lionel Strutt, who later pitch-changed the voices using equalisation and a Publison Infernal machine to make them sound as they did in rest of the film.

At the time Mayflower was located just off Park Lane. During the session Lean realised that 25 years before, the original cut of *Lawrence of Arabia* had been edited in rooms above the studio.

The restored *Lawrence of Arabia* was released in 1989 to universal acclaim and is an example of filmmaking on a grand scale that is still intelligent and subtle.

Photo: Cristiano Galbiati

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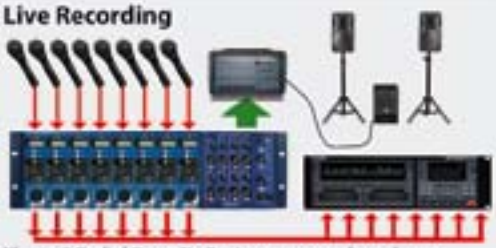

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